

# American BEE JOURNAL



Vol. 97 No. 6 1957

**JUNE**



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Hamilton, Illinois

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### Open Issue

Remember last December we also had an open issue. Its purpose is to publish material that has not been fitted into the departmental style used for most of the year. We will have two of these clearance issues, this one and December.

Commenting on this particular issue, we like the "Paradox of Acceptance" by Knutson, mainly because it parallels our own thinking. \* \* \* Hansen's "Comb Handling" covers most of the questions he has had about all-package-bee management \* \* \* Sumnick's EFB Observations will be accepted or questioned or even objected to. At least he is thinking, so if we get letters

about it they will be welcome \* \* \* This goes too for Dr. Eckert's "Chemotherapy." There may be a lot of chips from the woodpile about this. Anyway we belong to the chemotherapyists, so chip away. \* \* \* We have wanted Mrs. Grace's Infant Feeding in print for some time. Here is a brand new door to future honey sales. \* \* \* Finally, the somewhat long "Honey and Cancer" article by Dr. Jarvis finishes his consideration of this subject. Readers who may want to ask him questions about honey and health are free to do so and we may publish what he says. However he will have no further series.

## The Paradox of Acceptance

by Ben Knutson

Commercial beekeepers are depending more and more on southern queen breeders for their queens and this trend will continue. A satisfactory method for introducing these queens should be based on the use of the standard mailing cage with the escort bees left in the cage. The method should be simple and it should not require a follow-up trip. It should be reasonably safe, even in early spring before any honeyflow.

Relative to this difficult type of introduction I wish to advance a rule or law pertaining to acceptance which, to my knowledge, has not been stated before. I call it the "paradox of acceptance" and it is very simply phrased—the greater the need for a new young queen in a colony, the greater the difficulty of getting her accepted.

A colony, in good condition, with fine brood, plenty of bees and stores, will accept a new queen more readily than a colony in poor condition. We know that a laying worker colony cannot be requeened with a new, young queen. Neither can a colony with a drone laying queen. A colony with a failing queen, with poor brood and insufficient bees, should be considered in the same category.

A colony in prime condition has a high morale. It works energetically

and is comparatively gentle to handle. On the other hand, a poor colony or one with a failing queen has a low morale. It does not work energetically and it is often irritable and hard to manage. The bees' attitude is one of defense and distrust. If the old queen is found and killed and a new, young queen is given in the accepted way, this feeling of distrust is directed toward the new queen. Acceptance will be poor.

Therefore it is a great help, in introducing a new queen to such a colony, to take two or three combs of brood with adhering bees from a colony having a high morale and place them in the center of the brood nest of the poor colony. This will tend to rid the colony of its distrust of the new queen.

A better way, though, to requeen such a colony, is to establish a nucleus above it, using standard equipment with a double screen between the nucleus and the colony below. The nucleus should be stocked in the usual way with three or four combs of brood. This brood, with adhering bees, should be taken from a colony having high morale and no brood or bees should be taken from the poor colony below. It should be allowed to continue on just as it is.

The nucleus is then given the new,



young, laying queen in the mailing cage, with her escort bees, in the usual way, so she will be released in a day or two. Acceptance should run over 80% even when no nectar is coming in. This acceptance may be bettered by feeding the nucleus but this should be done with care so as not to provoke any robbing at all. During a flow, acceptance will run well over 90%. The top nucleus, of course, should only be allowed a small entrance as in common practice.

When the main flow starts and there is ample evidence of white wax, with the entire yard now being superseded, dispose of the old and failing queen below and remove the double screen, leaving an opening for the bees above. This procedure will change a hopeless colony in early spring into a good one for the honeyflow.

No doubt there are many factors which affect the morale of a colony, some originating inside the hive, some outside. For instance, disease in a colony makes introduction more difficult. (Incidentally it is just a short time since requeening EFB colonies was recommended.) Colonies bothered by skunks, ants or even birds have a lowered morale. Colonies in unprotected sites where varying winds strike them have a lowered morale. Bees low on stores are irritable and would be difficult to requeen. Any circumstance which interferes with the even flow of the colonies in spring build-up would lower its morale and make acceptance more difficult.

Colorado

## HONEY-BEE POST

by Wayne LeRoy

In these times of cloak and dagger activity in international politics it is curious that no one remembers Monsieur Louis Taynac, of Versailles, in France, who was, in his day, the most celebrated beekeeper in Europe, and who had several thousand honey bees trained to carry messages like carrier pigeons.

Monsieur Taynac, who was too young to fight in the Franco-Prussian War in 1870, was still old enough to be impressed by what he saw, and particularly with the difficulty his countrymen had during the siege of Paris in maintaining communications with the outside world.

Later, when he was in a position to do so, Monsieur Taynac turned his imagination to the problem of producing a live message carrier small enough to be undetectable, yet large enough to carry a comprehensive message for a practical distance.

Being an entomologist he immediately thought of insects, and being in particular a beekeeper he started experimenting with his bees. It was not long until he had worked out a way to accomplish what he wanted and generously he offered his system to the French Army which, with its characteristic closed military mind, refused even to consider the thing as possible.

Yet the Taynac system was simple. Bees have been known to fly as much as 15 or 20 miles in their efforts to gather nectar. Monsieur Taynac's bees consistently traveled 10 miles

with messages in code, written on bits of stiff paper glued to their backs.

These bits of paper were about one quarter of an inch wide and three quarters of an inch long, split at the end for one quarter of an inch and this split bent at right angles and stuck to the back of each bee.

The bees were kept in a little box and fed on honey. When they were released each would hurry home with his load of honey and messages. The stiff paper on his back prevented him from entering the hive and enabled him to be easily picked up and the message decoded.

In 1896, when he was preparing the first edition of *The American Boy's Book of Sport*, Dan Beard was so impressed by M. Taynac's methods he devoted a full chapter to them.

### A Letter to a Senator

45 Pembroke Road  
Darien, Connecticut.

April 10, 1957.

The Hon. Albert P. Morano  
House Office Building  
Washington 25, D. C.

Dear Sir:

According to the New York Times of March 30, the U. S. Department of Agriculture is going to spray with DDT by aeroplane an area of 3,000,000 acres in New York, New Jersey and Pennsylvania. This program is proudly called "the largest single aerial spray job ever conducted in the U. S."

What is the sense in supporting the expensive World Health Organization when we so flatly disregard what they say? "TOXIC HAZARDS OF PESTICIDES TO MAN" (Geneva, October, 1956) tells us that "DDT, BHC and Dieldrin are eliminated in the milk of lactating animals, and DDT has been found in human milk . . . . The toxicity of many members of the chlorinated hydrocarbon group is much greater for the very young." (The underlining is ours.) How can we persist in ignoring this warning, made many times before?

The drift from aerial spraying is extremely difficult to control, and when done on such a gigantic scale is certain to overlap onto the milk-producing areas, or onto districts from which fodder or water supplies are derived. Read pages 284-297 of the 1952 Yearbook of Agriculture for a description of the persistence and cumulative buildup of DDT—a remarkable characteristic not even approached by any other known material.

As to its effect on the honeybee, this is a very serious matter; it would be hard to overestimate the importance to agriculture of the pollination of crops by bees. A report published in 1950 by Cornell University (*Gleanings in Bee Culture*, Vol. 78, Page 90) describes a small test with DDT on one apiary, using  $\frac{3}{4}$ -lb. to the acre instead of the customary 1-lb.; this says: "A few bees were noticed crawling around in front of the hives, but the number was insignificant." The report adds that "These bees appeared to be injured by the spray." The "insignificance" of the figures is obviously due to the fraction-of-an-acre scale on which the test was conducted, and the obvious query to arise is: Will this be true when the immense quantity of 3 million pounds is launched into the air?

If, Sir, you can exert your influence in restraining this callous and misguided proposal to endanger the public—and particularly the youngest members thereof—you will well deserve the thanks of all.

Yours faithfully,  
Arthur W. Furbank

### Pollen Consumption in Winter

E. P. Jeffree of the North of Scotland College of Agriculture, in a recent bulletin gives results of examination of colonies in winter on pollen consumption. Bees have the least brood in October. Practically no pollen is used during the broodless period (3 oz. as an average). Ordinary colonies have about 30 inches of pollen for winter of which they consume about 18 inches in February in producing 36 sq. inches of brood.

Other efforts by Mr. Jeffree and his co-worker, M. Della Allen, include colony size influence on Nosema prevalence, growth and decline of bee colonies, behavior of bees toward queen within the hive, and some valuable recommendations on careful examination of surrounding territory and its nectar possibilities both for amateur and commercial beekeepers before locating colonies, and the number which may succeed.

The college is located at Aberdeen in Scotland.

### Honey Flavored Titles of Novels

Honey from a Dark Hive, Bernice Kavinosky (1956)  
Honey in the Horn, H. K. Davis (1935)  
Honey Comb, Dorothy M. Richardson (1917)  
Samuel Freeman  
California

# Comb Handling in Package Beekeeping

by

**Henry W. Hansen**

Following the article "Package Beekeeping versus Overwintering" in August last year a number of readers asked about how to dispose of the bees in fall, how to remove the dead bees from the combs, what to do about the brood, and how to extract the honey with brood present. We thought Henry Hansen (co-author of the August article) could answer these questions.



There are four questions I would like to try to answer that always seem to come up when discussing package bees. They are:

- (1) How to kill package bees in the fall,
- (2) How to remove the dead bees from the combs,
- (3) What to do about the brood, and
- (4) How to extract the honey when brood is present in the combs.

The simplest question to answer is *how to kill the bees*. We go out the night before when all the bees are in the hive and throw a tablespoon of cyanide dust in the entrance and plug the entrance. The next morning the equipment and honey is ready to be taken in.

We like to leave the honey on the bees until we kill them so the colony is anywhere from four to seven full depth supers high. We do this to be able to check for disease without having to disturb the bees. We like to make a final inspection before we take the honey in.

If the colony is only two stories high, you only need to use half as much cyanide or what you can get on the end of a hive tool.

The only honey we take off before killing the bees is to get supers back if we need them. There is something nice about being able to take in a load of honey and forget about your bee veil.

As for *removing the dead bees from the combs*, that is very easy. At the time of the year when the bees are killed the weather is still warm enough so that the bees have not begun to cluster, and the bees

are on the combs, not in the cells. As a result it is only necessary to shake the comb and the dead bees fall right off.

If the bees are shaken within 3 days from the time they are killed, even in warm weather, they will be nice and dry and easy to get off the combs. If they sit longer than that, they tend to absorb moisture and become sticky, and then you have trouble shaking them off the comb.

We like to take each super and put it on an inverted lid while we are shaking the bees off the combs, and at that time any comb containing brood is examined for disease.

Our next questions are: *What to do about the brood*, and *how to extract the honey when brood is present in the combs*. Some people will take the brood and the honey that is in the brood comb and make up the brood nest for next year's package bees. We don't do that, and I will give you the reason why. We believe in having an "open" brood nest for the queen. In other words, we want empty combs in the middle of the brood nest, then the pollen, and on the outside of the brood nest the honey combs. The reason is that you will be able to get as much brood in two empty combs as you can in three combs with honey, and it will take more bees to keep the brood warm in three combs.

Always keep in mind in managing package bees that heat must be conserved. I am sure you will understand that when you realize what a small cluster of bees you have to start with as compared to a win-

tered colony. You have a young queen that is rarin' to go, and she will lay as many eggs as the bees can take care of, so that the more you can conserve, the faster the colony will build up. That is my reason for wanting empty combs and not combs with honey in the center of the brood nest.

That's the reason we extract the honey in the combs containing brood, which at that time of the year are mostly in the supers above the brood nest. The brood nest itself is usually empty; that is, it is if you have given your bees the amount of supers they needed during the summer flow.

The brood combs are uncapped like any other honey in the hive except that care must be used *not to uncapping the brood*. As for young larvae, there are very few because, when you kill the bees, the flow is over and the queen has stopped laying. You really don't have any problem in disposing of your comb with brood in after the honey has been extracted. When putting these combs back on the bees the next year, the bees will clean out the dead brood overnight. You might wonder, as a lot of people do, if the brood combs don't mold. I can assure you they don't if you store them in a dry place. They will dry out by the next year.

According to the recommendations made by the American Beekeeping Federation regarding honey house sanitation, it would not be permissible to extract honey from combs containing brood. If this recommendation becomes a law, the commercial package beekeeper is going

to have to start wintering bees again.

You cannot wait until all the brood has emerged to kill the bees. One of the big advantages in keeping package bees is that you can kill the bees early and save the honey that they would consume during the fall as well as during the winter.

I was on the Board of Directors at the time the above recommendation was made by the American Beekeeping Federation, and while I agree wholeheartedly with all the other provisions of the proposed Sanitation Code approved by the Federation, I hope this one will be modi-

fied. However, I can see why the paragraph about not extracting the combs containing brood was included in the recommendations. If care is not taken in extracting brood combs you would have a pretty bad mess of honey, and a federal inspector would definitely not approve the honey.

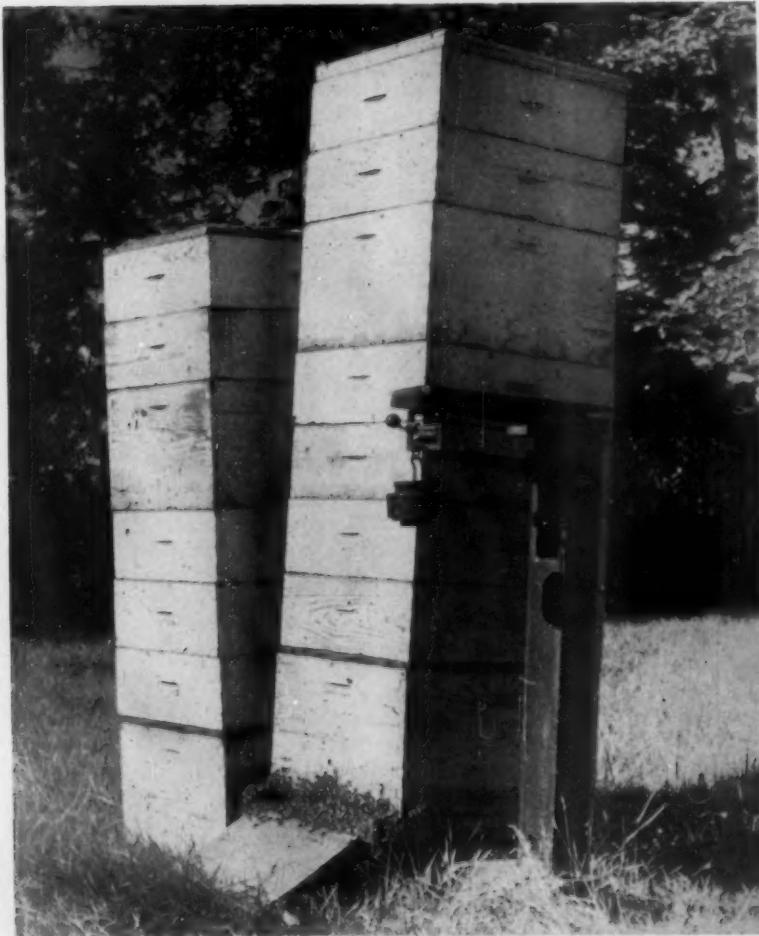
Of course on a small operation the beekeeper can get away from the brood problem altogether by killing the queen about 3 weeks before killing the bees. On a large commercial scale that is impractical and the cost would be prohibitive.

Saturday, July 13, 1957, the Iowa Beekeepers' Association is going to have a summer meeting at my place in Dakota City, Iowa, and any one interested in package bees is more than welcome. We will have one or two yards of package bees and we will have three different strains of bees. We will have a good strain of Italian bees, a 1957 Starline strain, and I have been promised a few of the proposed 1958 Starline queens. We will weigh the various colonies and you can see for yourself what the difference is.

Iowa

## Sometimes Conditions are Right

by Charles S. Hofmann



Conditions were right here. This scale hive, in 1955, produced a net gain for the year of 481 pounds of honey; 408 pounds net were removed.

1955 was a very good honey year here—one of the best we have ever had. The honeyflow came early and stayed late and in spots it was intense. The spring build-up period was characterized by better than average nectar yields in spite of persistent windy weather that took a considerable toll of bee life. Nosema was conspicuous by its absence and when the figures were in we found our scale hive (picture) had produced a net gain for the year of 481 lbs. of fine white honey. 408 lbs. net was removed from the colony as pictured. The hive equipment here is old style Dadant and so is a little larger even than the Modified Dadant hive. Therefore it holds considerably more honey per vertical inch than other hives. The honey was all removed down to the single story on August 12th. At that time two empty supers were set back on over the excluder and were subsequently almost filled. Therefore the picture does not show the whole story.

This colony was a normal overwintered colony and was headed by a Starline queen introduced in June the year before. The colony was not boosted with brood or bees or handled in any special way and although wintered in a single story it was heavy when taken out of the cellar and because of a good spring flow no feeding was needed. The bees at home were taken out of the cellar the night of March 30th. (This was about 10 days later than we usually get the cellar bees out, but March had been colder than normal.) The next afternoon several colonies were spot checked to determine how the bees had wintered. It was noted that very little brood was present in the hives, and none of the colonies examined had any emerging brood—less than half had any capped brood and the colony later chosen for the

scale hive described here had the equivalent of one small frame of brood, all eggs and young unsealed brood. Yet this colony (after a few wet cool days the last of May) opened the honeyflow on June 3rd with a 22 lb. gain.

More light rain and cloudy weather interfered with the flow for the next week when sudden good weather produced a 27 lb. day on June 13th. The evening of June 14th had me dragging out the test weights to check the scale when I couldn't believe my eyes that the colony had gained 38 lbs. Nothing seemed to be wrong with the scale so it was set up in our books that the old record of 28½ lbs. set on June 24th, 1927, had been exceeded by 9½ lbs. June 15th, 16th, and 17th produced gains of 25 lbs., 22½ lbs., and 13 lbs. respectively. This made a total gross gain in the five days of 125½ lbs. Shrinkage each day was light for such heavy gains, and the net gain amounted to 102½ lbs. for the five day period.

Now it takes the combination of a great many factors to produce a condition like this that can exceed a beekeeper's dream. One of these is that the colony must be very strong. More than that, there must be a perfect balance of bees and they must have complete faith in their queen to create morale with a fine edge and a capital M. Yet here a single queen colony was somehow able to do all this and produce record breaking gains even though they did not begin rearing brood until after March 20th. Now it is fact rather than theory that recognizes that late winter brood rearing is a must for wintering bees. This is to replace old bees and allow the colony to go into spring with a good proportion of young bees and therefore have the vigor and stamina to withstand the test of the spring build-up period. But should this apply to cellar bees, or are the two concepts of wintering entirely different? It has always seemed to us here that our best bees were those that did not begin brood rearing until about March 15th or later. When some condition causes winter brood rearing in a cellar it usually seems to enervate rather than strengthen the bees and certainly they would use more feed. It also is apt to cause mechanical dysentery or, worse yet, Nosema. Or in the case of Nosema perhaps brood rearing would be the result rather than the cause.

In theory my feeling toward win-

tering would be to, in effect, remove time from the bees. If we have had a good night's sleep, we wake up in the morning with no conscious knowledge of the hours we slept. Now bees cannot be made to sleep all winter, but it seems the more nearly we can make them oblivious of time the better preserved will be their strength and vitality. Bees wintered outdoors are always in sharp contact with the outside. But in a dark quiet cellar, conditions can be much different. If we can eliminate noise

and vibrations and by a complete blackout remove the milestones of time, daylight and darkness, and if we can keep the temperature range between 20 and 40 degrees with a fluctuation not exceeding more than about one degree in any one 24 hour period, then we should be rewarded with good wintering. Because if the bees cannot hear the clock tick or see the calendar, well—all at once it's spring, and time to get ready for another honeyflow.

Minnesota

### Propolis Poisoning

I have operated my bees without gloves for sixty years without ill effects. However, this last summer when removing combs from the hives I noticed the back end of the top bars of some frames were badly stuck up with very soft and sticky propolis. This stuck up my left forefinger only and as I had nothing with me to remove it thoroughly, part remained on for about three hours. In two days the skin appeared hard, dry and cracked, and very sore and heated and bled. I tried several places for help, including an M.D. and used salves without any relief for three months. When uncapping later I experienced the same trouble in the palm of my left hand in holding the frames so I am sure propolis was the cause. Reasoning it out as a burn from the constant burning sensation, such as I once had when I had my back burned through lack of covering on the Saskatchewan prairie, I wrapped the finger up in a ten per cent solution of picric acid and kept it soaked. In two weeks the finger was completely healed, but the skin still remains thin but hardening. My advice is if you have very soft sticky propolis, use a glove finger on that particular finger. If it becomes cumbersome and you have to discard the covering, on completion of inspection, remove the propolis with a waterless hand cleaner used by garage mechanics; one not containing lye, acid, or alkali. I use one containing ammonia. When the cleaner has turned to liquid by brisk rubbing on the hands remove with newsprint and the hands will be found to be perfectly clean and soft. The odor may last for a short time but will disappear with the first washing. Now I include a tin of hand cleaner and some newsprint whenever I go to the outapiary.

H. H. Luke  
British Columbia

### Texas Death

Fred W. Sternenberg of Lockhart, Texas died March 9. He was in the bee business with his brother Arthur for many years and prominent in all Texas beekeeping activities.

### Intermountain Bee Lab Moves

We learn from "Colorado Bee Notes" that the Intermountain Bee Laboratory has just moved into a new laboratory making room for Sturtevant, Revell, Hitchcock and office personnel as well as for laboratory, extracting and other facilities.

### Roller Painting Bee Equipment

Walter Fliegner, commercial beekeeper of Riverton, Wyo. says that he and others of his neighborhood paint their supers and other equipment with rollers; a big improvement and time saver over the brush.

(Colorado Bee Notes.)

### Scouts Get Interested

In 1955 the Cub Scouts devoted a full month to the honey bee. Near us we have a family of scouters, all very active. The mother has a den of Cub Scouts meeting in her basement and she invited me to talk to them about bees. In spring they visited my apiary and were deeply interested. They set up equipment and soon called me to help them hive a swarm they found in a tree.

I suggested that they quarter them before an east window above the attic floor in their garage. They did this and we had so many bees on my wife's flowers she was at first uneasy and so many at our bird bath that the birds quit taking baths—never knew before that birds were so modest. The boys got a fine crop of honey but then destroyed the bees. They are now confirmed beekeepers, however, and are on the prowl for more swarms.

Ernest Morris  
Wisconsin



## Our Cover Picture

### KAREN SCHUMACHER

Karen is the daughter of Hans Schumacher of the B-Z-B Honey Company in Alhambra, California. Hans is so well known among west coast beekeepers that he requires no introduction. For those who know little about him, his firm packs and distributes honey all over the west and exports honey abroad. Hans is active in all industry affairs and a real leader. His mother used to tell him that "anything worth doing is worth doing well." So he sent so many pictures of Karen it was hard to choose among them. We thought the one on the cover was the best and maybe this one second best. That jar of honey is one of the retail containers for B-Z-B Honey Flavored Syrup. This is a brand new item to help make inroads on the syrup business. Karen turned five years old on January 12. We used Karen's picture before when she was much younger; just a diapered little tot. The Schumachers have a grand family (see picture above). At the left is George, 19, and a sophomore in Occidental College, Los Angeles; then John, 14, and an 8th grader and Life Scout; then Margaret, dear Mama, from Indiana; Karen, perched above, "peaches and cream"; then the "Old Man"; finally sweet Susan, a sophomore in San Marino High School.



### Australian Honey Downgraded?

The Australian Honey Advisory Council recently examined numerous samples of their honey placed on retail sale in Britain. Their conclusions are that there were 75 percent of the samples either fermented or unclean and unfit for human consumption. Conclusions are that traders and packers have downgraded good Australian honey by blending with inferior lots, according to the Australian Bee Journal.

### Smuggling Honey

This item from True magazine for April might come in handy.

*The art of smuggling*, cultivated through the ages by free-trade enthusiasts, added a new technique during World War II in the form of an insect air lift. In northern Italy, a merchant had 200 pounds of honey. In Switzerland, a beekeeping trader had a market for it. Between them lay the closed and guarded border.

The resourceful Swiss got a message through to the Italian, instructing him to bring his honey jars to a forest near the frontier and leave them there, uncovered. Then the trader moved his beehives into the forest on the Swiss side, about 1,000 yards away. The bees didn't take long to discover the rich supply of natural food. In less than three days, busily bee-lining back and forth, they smuggled the entire 200 pounds of honey to their own hives, unsuspected by the border guards—who certainly would have been ill-advised to try to stop them. *By Marion Roth, New York, N.Y.*

(Courtesy Leon Kimbrough)

### Honey Consumption in U.S.A.

Household Food Consumption Survey 1955, Report No. 1 issued by the U. S. Department of Agriculture covers a survey of the household consumption of various foods among which honey was included. The sur-

vey was conducted in that area comprising states in the Northeast and Central West covering all north of the Ohio river and west to the Colorado-Wyoming-Montana lines.

Briefly the percentage of households using honey is 7.2%; 10.8 percent of households with incomes of \$10,000 or over used honey, while the percentage was only 5.7 in those with incomes of from \$2,000 to \$3,000.

However families with incomes of \$3,000 to \$5,000 used 4.16 pounds of honey per year while the wealthier \$10,000 bracket used only 1.56 pounds per year, with an overall average of 2.6 pounds.

9.2 percent of families in the rural farm areas used honey with only 6.8 in the urban areas.

To those wishing to get this 192 page publication (honey mentioned on 8 pages) we assume that a letter to your congressman requesting the publication as above would bring results.

# Some Observations On European Foulbrood

by William E. Sumnick

European foulbrood has in recent years provoked much discussion about antibiotics for its control. Of course this is all new and should receive much attention. It seems, however, a great many beekeepers have forgotten what they originally knew or should have known about this disease. Most beekeepers seem to realize that European never bothered them much until 1940 or the years that followed. You can tell me I am wrong, but breeding queens and working bees for fruit pollination have convinced me that European's increase over the years is the result of advancing our breeding program to gain a definite object with our bees, along with modern insecticides which our friends, the farmers, are now using on their crops.

I believe it was in the 1930 era that stock resistant to American foulbrood was bred for those who were unfortunate enough to need it. Here was a stock which was selected for a definite object and it did what was claimed for it. It was resistant to American foulbrood. But that was all. I never heard any beekeeper

extol its superior quality in any other manner, but a few have confided they felt it lacked resistance to European. I am convinced, that in selecting over the years with only one goal in view, this stock lost some of the resistance to European the good Italian stock has always had. The same thing is going to be found true on other selections and may be a weakness in the hybrids we have all been interested in. However after a few years personal trial on a small scale, I have thus far had good luck with the new hybrid.

In Colorado a number of years ago, an attempt was made by all who had European badly to requeen quickly with new stock. Often this failed. Little wonder that it did as the cure comes from the period of queenlessness during which the workers clean up the infection. Good Italians from that point on seem resistant enough to keep it out. Now this sounds simple and it is if you have only a mild infection in the apiary. But if you get European badly and every hive has it the cure is not at all simple. It takes a strong hive



to clean itself up during queenlessness and about the only way to make hives that are badly infected strong, is to unite. Now this will leave you with 50% of your hives empty and their combs infected, and may I stress those last two words.

In a bad infection the doubled-up hives may not clean up since all the stock lacks resistance in the first place and just seem unable to do a nice job in polishing and cleaning each cell. Keep in mind also the fact that the addition of a new queen will not put new stock into the hive for some time. So invariably in a bad infection of European some hives seem unable to clean up and the disease keeps recurring, for some time, even to a small extent the following year with good Italian stock. When European has once been cleaned up and the beekeeper keeps a good stock for his area, European will give him little trouble under normal beekeeping conditions.

Some years, not many fortunately, good stock will go through a period of European in the spring and then it will disappear and the bees go on for years without a trace of it. If you operate where your bees may get poisoned you will have hives come down with European after the poisoned brood is removed and the bees are recovering. In pollination work I have had this happen many times.

Milton Stricker in an American Bee Journal article on pollination a few years ago, mentioned the ravages of European in southern New Jersey where he pollinated and its disappearance when he could move his hives into northwestern New Jersey,



One of Bill Sumnick's yards in the Catskills where your Editor used to keep bees with J. B. Merwin many years ago.

where a general dairy type of farming is conducted.

I don't operate Mr. Stricker's hives but I am certain his troubles in southern New Jersey come from poison and his stock is good or it would not clean up the European when the hives are moved away to an area where insecticides are not used.

Now just what does bring on European? I am only a beekeeper, not a scientist, but I am convinced European gets its start when the field and nurse bees get out of some set ratio with the brood, and this ratio varies greatly with the strain of stock.

How else can we explain European coming to an area one spring and then vanishing for ten years? There is some condition in the weather that one spring, which throws the bee-brood ratio at that time completely out of its normal.

How else can we explain its abundance in fruit pollination work and rare occurrence when bees are operated for honey only. The pollinating beekeeper chills brood, smotherers bees, poisons some bees, etc. He constantly upsets the bee-brood ratio without any intentions of doing so. It is just part of the pollination work.

I once gave some of my hives a dose of European by moving in the spring a load of bees less than half a mile. It was several weeks before I went back and found two big clusters hanging in the old location. Here was proof that these hives had lost some of their field bees at a critical time. Later on those bees on that load were the only ones to have European that season. About 75% had it, of which 25% had it fairly bad.

It is commonly known that the darker Italian crosses, as well as the condemned brown bee, are good hustlers and producers. Did you ever notice how these bees start off in the spring compared with pure three banded or yellow Italians? In almost every case the darker bee is moving ahead faster, more brood, queens laying heavier, and the whole hive in better condition until European hits it. Yet after such a hive has European, its pure Italian neighbor (if you have a mixed apiary) won't even catch it. There is something about that great spring effort, which pushes the brood, beyond the ability of the nurse and field bees to properly care for it. I mention field bees, be-

cause they do bring in nectar and pollen for the brood and European almost always will start after a prolonged wet or cold spell in the spring when the field bees can't work so I feel they are tied into this situation somehow, as well as the nurses.

In poisoning, European also starts after the work of the field bees is absent, the field bees having been killed.

Making money with bees means keeping costs down. Feeding with antibiotics is not cheap, nor is the labor it requires. The use of antibiotics may be desirable to clean up a specific infection of European, but if the disease keeps recurring I would certainly change stock. There is as much difference in the Italian stock our queen breeders raise as there is between day and night. Yet they all do a thriving business.

Did you ever buy queens, give them a trial and then discard them, wondering how a breeder could stay in business with such stock? Well the answer is this; that stock is probably excellent under other conditions in another part of this vast country of ours. Do you think this is false? Let me tell you of an incident to prove it.

Many years ago, before World War II, a well-known New Mexico beekeeper tried the stock of some forty breeders and wrote an article in the bee journals about the various results, not naming the breeders, of course. I wrote to this gentleman asking if he wouldn't give me the names of the breeders with stock that gave him the finest results. He was kind enough to write and give me this information.

I immediately started buying the recommended stock and almost as quickly started having wintering trouble, swarm trouble, and with one stock, mild outbreak of European in the spring! It was only later, during the war, when I drove through warm, dry, New Mexico in January that I realized that bees in that climate and very probably that type of honeyflow, couldn't possibly excel under opposite conditions in New York.

There never will be one stock of bees or one type of hybrid that will excel everywhere. The best each beekeeper can do is carefully select the best type of bee for his conditions and keep an eye on its resistance to European under these conditions. With such stock he should have little use for the antibiotics.

#### Queens to Jamieson

Dr. C. A. Jamieson, Chief of the Apiculture Division, Experimental Farms Service, Ottawa, Ontario, is undertaking a study of the part Nosema may play in the death of queens, particularly in supersEDURE. He needs dead queens. Could use a thousand this year. So, please help in this important study. Send any dead queens you may find to the address above.

#### Corn Oil and Cholesterol

Some doctors now begin to believe that the accumulation of cholesterol which so often leads to heart trouble can be greatly reduced by taking some form of corn oil like Mazola. One Canadian doctor reports that he has used it successfully for a number of years. So those Indians, like the Mayas, who never have heart trouble, were wise in the ways of diet and have been for centuries. Add a good diet of honey to that and you have some of the best medicine.

J. I. Chapin, Chicago

#### Report from Northern California

Readers may remember the story by Mrs. Gladys Halter in October about "Mixed Farming and Beekeeping." The Halters have a 200 acre farm with about 60 acres of mixed sweet clover and alfalfa. In 1951 they got five tons of honey from 130 colonies and in 1952 about six tons; in 1953, ten tons; in 1954 about the same; in 1955, driest on record, only 5½ tons.

In 1956 she wrote: "We got 11 tons of honey and saved a ton for spring feeding, in addition to leaving two-story hives very heavy. We also got 438 pounds of beeswax. Put in seventy-three new queens in spring in 110 colonies. Our alfalfa seed is also the best we have ever had. I did all the bee work until extracting time."

Mrs. W. G. Halter  
Mantague, Cal.

#### Seed Prices Up

The U. S. Department of Agriculture reports prices of all legume seeds are the highest they have been for several years, although still not up to the 1947-49 average. Likely the soil bank demand as well as the 1956 drought are responsible for the higher prices.

# From the Honey Plant Gardens

by Melvin A. Pellett, Director

## Blue Spirea

Caryopteris, known as Blue Spirea or Blue Mist, is an attractive low growing shrub. It blooms for a long time in late summer and fall, with beautiful lacy blue flowers. We note honeybees were nearly always working this plant when in bloom. This shrub is not entirely hardy to this climate since the plants in the test garden kill back in winter and some have died out. In our climate it might be treated like roses, cut back and covered with mulch for winter. Blue Mist is gaining in popularity to plant for flower border or specimen plants. It is planted for the delicate blue flowers coming at a time when there is not so much bloom in gardens and it is one honeybees will seek wherever it is to be found.

## Goat Willow

We note Goat Willow (*Salix caprea*) is referred to as the best of the Pussy Willows because it has the largest catkins. That is no doubt true. It also goes by the more attractive name of French Pussy Willow.

Pussy Willows are often kept cut back in gardens to keep down the size and to induce vigor of growth. The Goat Willow specimens in the test gardens which have been left untrimmed have grown into large shrubs. They are decorated with very large catkins early in the spring before the leaves appear. That is in April here and the flowers are freely visited by honey bees in large num-

bers gathering a lot of pollen. It is a bee-line from the hives to Goat Willow at a time when there is not much else in bloom.

*Salix caprea* is native to parts of Europe and Asia. It is worthwhile to plant if only for the very large catkins of this pussy willow announcing the arrival of spring.

## Golden Cleome

The high quality flower shown in the photo is Golden Cleome (*Cleome lutea*). It originates as an annual prairie wildflower native to some relatively dry regions in some of our western states. When we plant it on our fertile soil in more humid climate and keep it cultivated, it may grow to six or seven feet tall and

some have stalks as large around at the base as a shovel handle.

Golden Cleome was one of the early introductions in the American Bee Journal Honey Plant Test Gardens and was written up in this publication at that time. Since then it has found its way into a number of seed catalogues for its ornamental qualities.

Golden Cleome has proved here to be a good honey plant and bees visit the flowers freely. At one time when there was a sizable planting here it provided the stimulus for the adjoining apiary to maintain fall brood rearing after other apairies in this section had stopped raising brood.

We have heard of Golden Cleome growing in Oregon, Utah, and some southwestern states. Some years ago on a trip to Yellowstone Park we noted the plant growing sparingly on some rather poor land in western Wyoming. The plants were close to the ground and so small that a close examination was required to know that it was really *Cleome lutea*. We have heard of the plant reaching a large size for an annual growing wild in some other localities. We doubt whether it could perpetuate itself without cultivation in our section since it does not compete well with weeds and other plants in our more humid climate. Given cultivation it grows well and blooms from mid-summer until frost with increasing number of flowers on terminal spikes as the plants grow larger.



Golden Cleome



Goat willow in the Test Garden has grown into a large shrub.



Flowers of Blue Spirea are freely visited by the bees.

# Economics of the Chemotherapy of Foulbrood Diseases

Dr. J. E. Eckert

University of California

A practical cure for American foulbrood was unknown until the discovery by Dr. Haseman in 1945 that colonies could eradicate the disease if their food contained minute quantities of sulfathiazole. The only exception to this statement might be the use of disease-resistant bees and their use has not been too practical because of the lack of control in the mating of queens reared from resistant strains. Prior to 1945 the compulsory destruction of all diseased colonies and their combs was the general rule and inspection services were established to see that such colonies were discovered and destroyed.

Since the initial discovery of the relation of sulfathiazole to the cure of American foulbrood, many investigators and beekeepers began experimenting with the antibiotics and with methods of their application. At present sodium sulfathiazole and terramycin are recognized as specific controls for American foulbrood when they are applied properly. Other antibiotics have also been found effective against this disease but these two have proved to be the most effective and economical.

Terramycin has also been found to be effective in the prevention and cure of European foulbrood although streptomycin appears to have some advantage over terramycin. Streptomycin is not effective against American foulbrood, and sulfathiazole has no effect on European foulbrood.

## General Adoption of Chemotherapy

Judged from the results of correspondence, personal contact, and articles in bee journals, chemotherapy has been accepted quite generally during the past twelve years by a majority of the commercial beekeepers. Compulsory burning is giving way to optional burning and treatment in many of the states, and in the provinces of Canada, although some of the inspection services still practice compulsory burning when diseased colonies are found. Commercial as well as side-line beekeepers

who practice preventive feeding properly have found that the number of colonies infected with AFB has been reduced so remarkably that they may find only one or two diseased colonies a year now where formerly they had to destroy from 5 to 10 per cent or more of their colonies each year. Many beekeepers combine colony inspection and preventive treatment with requeening manipulative practices and thus save thousands of dollars annually.

Criticism of the use of chemotherapy comes largely from a small segment of the inspection service and a minor number of beekeepers who have never given the use of antibiotics a fair trial. Otherwise, they could not continue to say that "Antibiotics do not effect a cure but merely cover up the disease"; or "It is not economical"; or "The beekeeper cannot be trusted to follow directions"; or "The honey industry will be ruined." None of these criticisms have proved to be valid during the past twelve years where chemotherapy has been used properly.

## Comparison of cost of burning vs Chemotherapy

According to catalog prices of bee supplies, it costs the following amounts to burn a colony of bees, combs, frames, and honey, and to re-establish the colony:

Labor of killing and burning	\$1.50
Scraping and scorching hive	.50
Value of combs destroyed	
\$.35 each	3.50
Value of bees and queen, 3 lbs.	4.50
Value of honey destroyed,	
av. 30 lbs.	3.00
Cost of replacing 10 frames, KD	1.75
Cost of 10 sheets wired comb	
foundation	2.40
Assembling frames and foundation	.75
Replacement of bees and queen	
3 lbs.	4.50

\$22.40

(These costs might be reduced in



some instances by quantity discounts or by melting the combs and saving the wax, and by using "surplus" bees to make increase.)

The apiary inspection chart that was distributed at the annual convention of the Apiary Inspectors of America, at Long Beach, 1957, gave some interesting figures on the cost of inspection. Eleven states reported the treatment of 1170 colonies out of a total of 15,6000 that were reported diseased. (California treated 51, "officially," but these were not reported.) Canada treated 1475 colonies out of 2127 found infected. The approximate average cost reported for all colonies inspected in the U. S. was \$.52 per colony, ranging from \$.10 to \$1.20. The average cost based on the total number of colonies found infected was \$38.44 per colony. California had the largest number of colonies, 537,000, the largest appropriation, \$99,000, with an average cost of \$.55 per colony and a cost of \$27.41 for each colony found diseased.

## What Does it Cost to Use Chemotherapy?

Chemotherapy of bee diseases should be divided into preventive and eradication practices. Most beekeepers are using antibiotics during the spring build-up for preventive purposes and the additional costs are little more than the cost of the material applied in the form of dusts or when added to syrup for stimulative feeding. Sulfathiazole may be added to fall stores in order to be in the hive when brood rearing starts in the early spring before hives are normally opened.

The chemicals and antibiotics were provided by Chas. Pfizer & Co., Inc., and Van Waters & Rogers, Inc., San Francisco.

## ERADICATION OF AMERICAN FOULBROOD BY CHEMOTHERAPY

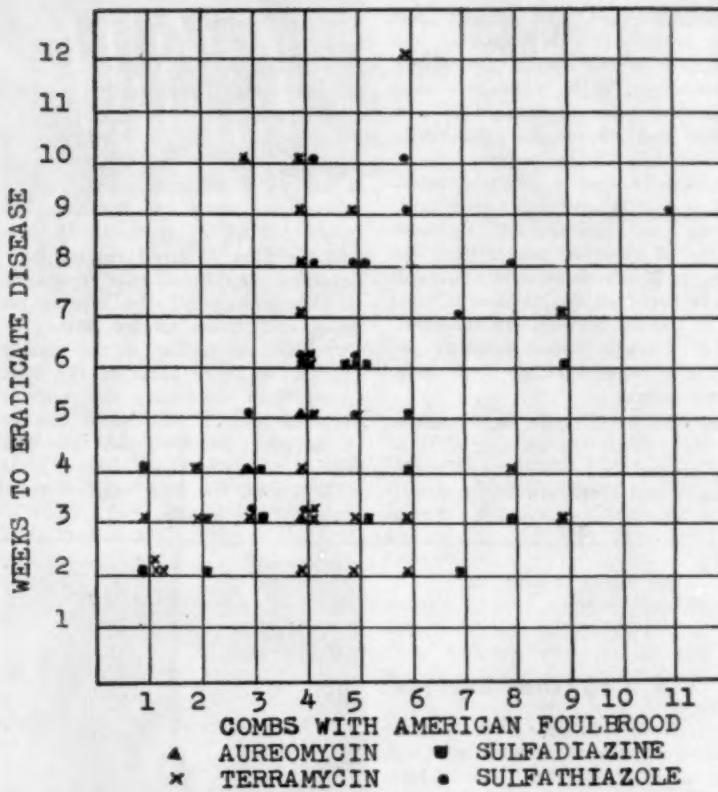


Fig. 1. Distribution of infected combs in relation to length of treatment to effect a cure with different chemicals.

Commercial beekeepers with several thousand colonies have found that a consistent application of antibiotics in the spring for preventive purposes has cut down their incidence of AFB to where it is no longer a problem. Three feedings or dustings at weekly or ten day intervals in the early spring are generally sufficient to stimulate brood rearing and to protect the colony for five or six weeks when robbing is the main cause of spreading AFB. Not more than one gram of sodium sulfathiazole need be fed or dusted at each application and generally one-half gram is sufficient. The cost is approximately one cent a gram for the sulfathiazole. If terramycin is used for both AFB and EFB, the cost will be approximately \$.10 a gram but no more than 0.2 gram active terramycin need be applied at each application. (1 gram TM25—Ed.)

The fundamental principle of preventive feeding should be to apply enough antibiotic to last over a five to six weeks' period in order to eradicate any mild case of AFB that may

be present or to protect against infection from any infected honey that may be secured. Preventive feeding is neither necessary nor desirable during the honeyflow and need not be used where neither AFB nor EFB is present in the apiary or within flying distance of the apiary. It is desirable where thousands of colonies of different beekeepers are densely concentrated in a relatively small area, as for pollination purposes.

The cost of eradicating AFB from infected colonies is more definite than in preventive feeding, in that one can see the effects of the medication. The cost varies with the procedure and may be no more costly than preventive feeding when the antibiotics are supplied in dust form. Our procedure is to extract all of the old honey from the super combs and the heavier broodless combs in the brood chamber, and to establish a colony in each hive body of combs. The treated colonies are dusted until they use up any old honey present in their combs and until brood has been

reared in all combs without any evidence of any scale or diseased brood. Generally, bees will not remove scales of AFB until they need the cells for brood rearing. Side combs have to be worked through the center of the brood chamber. Colonies needing stores are fed the old honey diluted one-fourth to one-half with the antibiotic dissolved in the water. The average amount of antibiotic given at each application need be no greater than one gram of sodium sulfathiazole or 0.2 gram of active terramycin to the gallon of syrup or at each dusting.

A summary of the total costs of eradicating AFB from 22 colonies this past year averaged \$3.19 per colony, in which \$1.50 per colony was allowed for labor and the balance for an average of 2.8 grams for sulfathiazole and 0.8 grams for terramycin. The sugar and honey fed were valued at \$.10 a pound. We used TM-10 dust mixed with 3 parts of powdered sugar, or 7 teaspoons of sodium sulfathiazole to the pound of powdered sugar. (Some beekeepers use one pound of sulfa to five or eight pounds of powdered sugar. One successful beekeeper uses a mixture of 15 pounds of animal salt, 15 pounds of TM-10 and one pound of granular sodium sulfathiazole and applies one ounce of the mixture on each of three or four applications at weekly or ten-day intervals during spring build-up.) We haven't tried this mixture but expect to. The cost of labor included the manipulations a healthy colony would normally receive.

### *Time Intervals to Eradicate AFB*

In order to try to correlate the degree of infection with time of treatment and type of antibiotic, we tabulated the data for 62 colonies from which AFB had been eradicated during the past two years. The data in Figure 1 shows no direct relationship between duration of treatment and amount of infection present. The colonies varied in strength, but all were either strong enough to cover the majority of combs in a one-story hive or bees were added. One should always strengthen weak colonies and replace old queens: in other words, practice good beekeeping principles in building up a colony for a honeyflow. Time could be saved in eradicating AFB if all of the badly infected brood combs were burned, and replaced with drawn combs or frames of comb foundation, but it is surprising how quickly a strong colony can clean up badly infected combs

and produce healthy brood in previously diseased cells.

Colonies from which AFB had been eradicated in the spring were released for honey production and averaged 60-90 pounds of honey. Three-story colonies had been built up to make three two-story colonies in time for the July honeyflow.

There has been no recurrence of AFB when the treatment was thoroughly done, as described. There should be no surplus of medicated honey in the combs at the beginning of the honeyflow and no applications need or should be applied during the honeyflow if the honey is to be sold. Our treated colonies are tested during the summer, fall and following spring, during which time they rear brood without the aid of any antibiotics. They are generally wintered as two-queen colonies and are divided again in the spring, without benefit of antibiotics. Since they come through these periods without any evidence of AFB they are judged free of disease, and used accordingly.

#### *Check of Possible Carry-Over of Spores*

Since the criticism has been raised that once a comb is infected it will always be infected, we crushed six previously infected combs, after chilling them, into small fragments and mixed the pieces of each comb in a quart of sugar syrup and fed the lot to disease-free and antibiotic-free colonies, permitting the bees to lick all of the pieces of broken comb. None of the colonies developed AFB during the balance of the summer and all were disease free this spring. This test will be conducted on a still larger scale. No recurrence of disease has occurred over the years in which previously diseased combs have been used indiscriminately in our producing colonies and nuclei. While preventive feeding is practical in areas subjected to bee diseases, we have used only infected colonies in our treatments.

#### *Length of Effectiveness of Terramycin*

Three badly diseased colonies were fed honey syrup medicated with terramycin from September 21 to October 11 at Davis and then wintered over. One was free of disease on March 21 and the two others were greatly improved but still had many old scales in several frames. No new disease had developed and new areas had been cleaned of scales during at least three cycles of brood this spring. It would appear that the

terramycin was still effective after approximately five months.\*

#### *Conclusions*

Chemotherapy will succeed best when combined with inspection and education in the better methods of beekeeping. Both preventive and eradicative measures should be consistent and thoroughly understood and applied. Twelve years of use of sulfathiazole and a slightly lesser number for the antibiotics have turned up no significantly resistant strains of bacteria, nor injured the honey or honey market. Once a colony is cured of the disease, it need not be treated preventively again unless it contracts disease from an exchange of equipment or from some outside source.

The time or duration of treatment will vary with the amount of disease present but more so with the strength and brood rearing potential of the colony being treated. There

is no valid reason for disagreements on chemotherapy. All those who doubt its efficiency need only give it a fair trial and then to educate their neighbor beekeeper into using it correctly.

\*Katznelson (ABJ 96:137, 1956) reported that terramycin was inactivated in the laboratory in less than 30 days at 93° F. (brood rearing temperature). When medicated syrup is fed in the fall, it is usually stored around the brood and in the super combs. Much of it would be outside the area of brood rearing temperature. As brood rearing ceases, the temperature of the hive is reduced and varies around 60 to 75° F., sometimes higher, in the cluster and less in other parts of the hive. Under such conditions the activity of terramycin is lengthened and as in the above colonies, may last long enough to protect the brood from AFB during the first two or three cycles in the spring.

### **Dr. "Bill" Coggshall Resigns**

William L. Coggshall, Extension Apiarist at Cornell University since 1949, has resigned, effective April 1st. Dr. Coggshall will direct the manufacture of comb foundation and other wax products for Wax Workers, Ithaca, N. Y. He was engaged in commercial beekeeping, before his appointment to the Staff of Cornell, and helped organize the Finger Lakes Honey Producers Co-op at Groton, N. Y., serving as its president from 1939 to 1945.



#### **Smoker Fuel**

Take the wife's wash tub and dump water two inches into the tub. Dump 4 oz. saltpeter into the water. Grab an armful of newspapers, and throw down by the tub. Chuck the paper sheet by sheet into the water and keep moving it around with the wife's mop stick. Keep going until the water is all soaked up.

Then squeeze the paper into balls and spread the balls in the sun. When dry better put the balls into something like a 10 gallon milk can for safety sake, as a spark will light it. A smoker can be jammed full of

this stuff and never goes out and does not tar, or gum up the smoker. Good Smoke.

Roscoe Alderman  
Sebring, Florida

#### **Price Support Operations**

Loans made on honey in the price support program for the fiscal season ending March 15 totaled 1,639,000 pounds of which about 700,000 pounds still outstanding on March 15. Purchase agreements amounted to only 124,000 pounds. The totals were less than for any year since the plan was first put into operation in 1952.



# HONEY in infant feeding

by Harriett M. Grace

DIRECTOR  
American Honey Institute



In 1927 in Fremont, Michigan, an extraordinary thing took place. At least we call it extraordinary. And you will, too, if you believe that the ingenuity and resourcefulness of Americans is the instrument that tools our extraordinary standard of living.

That event was the rebirth of the Fremont Canning Company into the Gerber Products Company. It was the practical realization of the untried but magnificent idea that babies, too, rate foods that are wholesome yet simple to prepare.

No one with a child in the family needs to be told of the tremendous success of strained baby foods. Compliment enough for the industry is the rapid rate with which other companies leaped into the field, anxious to capture just a corner of that baby market pioneered by Gerber's.

Gerber's idea stuck because: 1. strained foods were hard to fix at home; 2. a new emphasis was placed on proper nutrition for the infant; 3. mothers were hard pressed for time and welcomed every timesaver; 4. babies were becoming "consumers" in the real marketing sense of the word.

Making its debut to society at this same time with less fanfare but equal importance was HONEY, another product which suddenly found a new market in an old commodity—babies.

And what a natural Honey was for the baby market! Clean, pure, easy to digest, simple to include in a milk formula, uncontaminated by disease organisms, easy and inexpensive to buy—what more could an industry ask?

But even a natural beauty needs to be shown off; Honey's natural qualities needed to be pointed out. It took the American Honey Institute to wield the pointer.

Just one year after Gerber's got under way did the Honey men in the country launch their American Honey Institute. One of the first jobs of the Institute was to get Honey and the baby introduced to each other.

A mere introduction was not enough. A jaunty "how-de-do" then a wave of goodby from the baby was not what we wanted for Honey. And it is not what we got.

We wanted—and got—a recognition of Honey's true value as a baby food, and a real acceptance of it as such at the marketplace.

The American Honey Institute was able to obtain for its bulletin Honey the seal of approval of the American Medical Association, a distinction that is sought by many but awarded to few.

And very important, the channeling of Honey's reputation through scientific channels has awakened the medical profession as a whole—doctors, nurses, pediatricians—to the value of Honey as an infant food. Now it is quite common to find a mother leaving the maternity ward of a hospital with her new born babe tucked under one arm and a Honey-Milk formula under the other.

These gains for Honey were not made in the space of a few months or a year. They could not possibly be. Ingrained acceptance of an idea such as using Honey in baby's milk takes years, sometimes generations. But once it is there, it is there for good.

Honey for Babies properly publicized and backed by the highly regarded medical profession has erased from the public's mind any misgivings or hostility toward Honey as an infant food.

But you say, how does this help me, who does not deal in abstract ideas of nutritional values, but rather in the very concrete worries of how in 'tarnation to sell Honey to the baby population?

Dan Gerber made a spiraling success of his business. Let's see what he did when he first started out with his strained baby foods. How did he break into this new market?

Gerber took his new product to the persons who would welcome it most, the mothers of America. He inserted small advertisements in coupon form in several national magazines, and offered for sale an assortment of Gerber's baby foods for the price of \$1.00. The coupon requested the name of the grocer most often patronized by that mother.

Coupons and dollar bills flowed into Fremont by the thousands. And along with them came the names of the grocers that served these mothers. Armed with this evidence that mothers wanted and would buy this new product, it was an easy matter to convince these grocers that they should stock Gerber's baby foods.

Such a plan could work for Honey.

Why can't Honey be hailed as a baby food by the people who produce it? Why can't it be packaged in little containers just big enough to supplement one day's rations for an infant child, so the formula-making mother could simply open one container for each time she makes her formula? Why can't this Baby Honey be sold at the baby counters in food stores, right beside all the other baby foods? We see

baby egg yolks, baby cereal, baby orange juice, baby meats and vegetables and fruits and custards and soups and biscuits—why not Baby Honey?

How do we get the mother to buy it? We advertise and we tell her this: Ask your doctor for a formula in which you may use Honey. Honey is good for your child, is recommended by many doctors, is clean, pure, and safe. But most of all, Honey is SWEET. And every mother knows that nothing appeals to a baby more

than something sweet. So let's have no fussing at mealtimes. Let's use Baby Honey as a way to teach babies to eat all foods. A honey-sweetened cereal will be eaten with smiles; a dab of Honey on a spoon laden with vegetables, and the vegetables disappear quickly; a touch of Baby Honey on a teething ring, and he will use it eagerly. And all we hope with the doctor's approving nod.

Well, that's something for Honey dealers to think about. Let us think actively about it. Then, let's get started!

## S I D E L I N E S

by Robert M. Mead

While the basic purpose in keeping bees is to produce honey there are by-products of the industry that are becoming increasingly important and worthy of the beekeepers serious consideration.

The most natural by-product of honey is beeswax. As this is written beeswax has increased several times in price and as it is consistently being used more and more in various industries it looks as though the price might stay somewhat favorable. Although there has always been some demand for it many of us have neglected its possibilities. Roughly speaking the larger beekeepers are the ones who save every scrap of wax and the small beekeeper the one who is somewhat careless in this respect.

Lack of enthusiasm on the part of the small beekeeper is caused generally by the difficulty of rendering wax in small lots and without any suitable equipment. It is highly recommended that he save wax regardless of this difficulty and that his accumulations be rendered by a commercial rendering plant or by a nearby beekeeper who may have suitable equipment. Some very good sources of wax are often overlooked. A large beekeeper I have worked for at times for many years carefully scrapes the inner side of his inner covers each spring on our first careful inspection. This accumulation of burr comb removed from inner covers counts up from the large number of colonies and I have no doubt that its value has at times offset part of the hired man's pay.

While I have not been as careful as I should have been in saving wax,

I do like to go through each colony sometime during the season and remove as much burr comb as possible from the frames. This should be done in real warm weather, and when the bees are good natured and not robbing as at some stage of the job you will have most of the combs outside the hive. Remove each frame, with hive tool scrape top and sides of top bar, scrape bottom of bottom bar and remove any excess wax from end bars. Scrape bottom board, which often gets rather well encrusted with oddly built comb, and remove any scrap comb from sides or ends of the inside of the hive. This not only makes the hive easier to inspect on subsequent inspections but will help fill the wax box.

Pollen: In parts of the East and in some other localities bees gather pollen greatly in excess of their needs. At present there is no market for pollen but all indications are that it is a highly nutritious substance containing in addition some properties that may tend to retard malignant growths. We need more research to determine the exact properties of pollen and see if it does not have some commercial value.

Royal Jelly: The value of royal jelly in treating the disease of weaknesses of the human body has been much discussed in the bee journals in recent years. I consider it a very remarkable substance but at times regret that it has been so highly recommended for so many different complaints. Beekeepers trying to sell the possible medicinal virtues of any bee product should remember that the medical profession is extremely shy about accepting any product that is

touted as a cure-all. There is some market now for royal jelly; it undoubtedly has some very real virtues. But what we need most of all here is to get down to basic facts; the kind of facts that might be acceptable to the American Medical Association. As far as production goes there are long season locations in the South probably more suitable for the production of royal jelly than they are for the production of honey.

Bee Venom: This is the latest news in the beekeeping field. That little shot of venom that curls your hair if a bee happens to inject it in the end of your nose has medicinal value. Laymen, and a handful of doctors have recognized for a long time that it had some virtue in treating rheumatism, arthritis and related ailments but it has never come into popular use. For one thing many people objected to being injected directly by bee stings. For another it was difficult to extract the pure venom from the bees and store it for medicinal use. Now these difficulties are being overcome.

Charles Mraz of Middlebury, Vt. with the help of a Hungarian woman doctor has established a bee venom research laboratory in his honey house at Middlebury. They will specialize in extracting venom from the bees and preparing it in a medically acceptable form so that doctors anywhere can use it if they wish. It is only fair to say that at present the medical profession is not enthusiastic about this product. This is something however that can be overcome in time and with patience. Dr. Sanders of New Hampshire is building up an extensive film record of cases both before and after treatment with bee venom and this is the kind of factual records that we need with all bee products having possible medicinal value.

So there is more to bees than stings and more to beekeeping than honey. Just what part in beekeeping the production of some of these sideline products will play in years to come no one knows. Beeswax certainly is a firmly established sideline and some or all of the others may come into their own in the next few years. One thing is certain, none of them can be ignored.

Vermont

# This Is The Queen

WISCONSIN



CAROL JAWORT

Miss Jawort was crowned Wisconsin Honey Queen at the 78th Annual Convention of the State Association at Viroqua. She is one of four daughters of Mr. and Mrs. Leonard Jawort and a senior at the Little Wolf High School, Manawa, and active in 4-H, FHA, and the Walter League. After her election she went to Oshkosh in a new Ford furnished by Manawa Motor Sales. She was interviewed by

reporters at the airport and the story was carried by both Associated and United Press services. Reports were also given on most of the state's radio and TV news reports. At Chicago she flew TWA to Los Angeles. She spoke before the Ladies Auxiliary of the Federation, at the 500 Club, Hobby Beekeepers meeting, Long Beach Lions Club, Cutco Aluminum Co., California Division meeting. Ap-

peared before the studio audience at Bob Crosby show, and at Red Skelton's show. Was mentioned on Queen for a Day. Was made a member of his Indian tribe by Chief White Eagle. Was photographed with Federation president and vice-president, national chairman of Cutco Aluminum, picture to appear in trade paper 30,000 circulation, and for a steamship trade paper. A story about Carol will appear in Prairie Farmer magazine.

In Wisconsin she made a radio broadcast over WHA farm hour, taped a message to be broadcast in March on homemakers program. A tape recording for WAPL at Appleton. Arrived from California at midnight Thursday and attended Farm & Home Week, Madison, on Friday.

While in California Carol distributed boxes of literature about Wisconsin furnished by our Conservation Department, 600 samples of honey candy supplied by Honey Acres and 600 samples of Wisconsin Cheese furnished by the Wisconsin Department of Agriculture.

Governor Vernon Thompson, Senators Joe McCarthy, and Alexander Wiley, Congressman Clement J. Zablocki, State Senator Chester Dempsey and TWA officials wrote letters of commendation to the officers and members of the State Association for the wonderful job in promoting Wisconsin honey.

## Carl Is Not Very Happy

That article by Carl Kalthoff in May (page 176) was a very good one. We intended to call attention to the fact that, in making the plates, the engraver reversed the pictures. Now Carl wants to be sure that you know about this. The cans of wax (see article) are standing to the left of the racks. They should be to the right to be in good working position. Also he says that the lower 13 inch slat in the diagram was drawn longer than the other. It should be the same as the other. These racks allow the operator to take hold of the foundation at both the front and back, an important feature. In diagram 1 it is stated that there are  $7\frac{1}{2}$  inches between the sides at the top and about 35 at the base. That is wrong. It is  $7\frac{1}{2}$  inches between the sides at both the top and the bottom. The upright pieces are 35 inches tall to which the 16 and 13 inch slats are nailed. Then in diagram 2 there are  $7\frac{1}{2}$  inches between the side pieces at both top and bottom. The cross piece at the bottom measures 14 inches.

# HONEY AND CANCER SERIES

(Last Article)

by Dr. D. C. Jarvis

As I follow calves and dairy cows when on pasture I learn as I test the juice of what they eat that it is always acid in reaction. They do not eat that which is alkaline in reaction. When I study little children five years of age or less I learn they like sour drinks. As I study aged native Vermonters who have lived close to the soil all their life I learn that the nutritional pathway they follow is one in which the daily intake of acid is emphasized. If this acid reaction of food before it enters the mouth is present in the food of calves, the food of dairy cows, little children and native Vermonters who live close to the soil, should not you and I accept this guidance and make sure that each day we take in the needed acid our body requires? We can provide for this acid tide by adding two teaspoonfuls of apple cider vinegar and two teaspoonfuls of honey to a glass of water and drinking the contents of the glass at least once a day. As a reward for following this guidance you will learn with the passing of time that you have a marked increase in energy and an increase in endurance to do the day's work. In addition you have the observation of Vermont folk medicine that beekeepers do not have cancer. Nature intended that fruits, berries, edible leaves and edible roots should provide the acid tide but with many people these foods are not popular.

I learn from my reading that potassium is associated with an acid. I also learn this from my study of fowl and animals. The body cells are controlled by a power higher than themselves and act in obedience to that power which is potassium. They have no freedom. They are bound by a fixed law to select only what is essential to their normal life and purpose. This selective action is interfered with when they cannot find the potassium to be selected because it has been removed in preparing food for market in the factory. Potassium possesses a truly insatiable thirst for water. It must be removed from foods prepared for market in factories so that these foods will not spoil but will keep a long time. When a body cell is unable to get the potassium it needs to maintain orderly behavior

it then begins to act as it pleases when the potassium control is missing. As a result the body cells revolt and we may have the appearance of cancer cells in the body.

Potassium has been employed in the treatment of disease for many centuries. Its use in Vermont folk medicine is very common, its use being based on practical experience. It has been recognized in Vermont folk medicine that potassium has the ability to promote the absorption of the products of inflammation in the body. At this time I wish to present observations made on fowl, animals, and human beings when an intake of potassium was provided either in apple cider vinegar, kelp from the ocean or Lugols solution of iodine which is 5 percent elemental iodine dissolved in a 10 percent solution of potassium iodide.

1. When a study of 54 dairy cows was started 23 of the cows had failed to start a new pregnancy. Some of the cows had not done so for as long as one year. Two ounces of apple cider vinegar for the acid and potassium it contained were poured over the ration of each cow at each feeding twice a day after the ration had been placed in the feed trough. This was started November 1st. By the 23rd of February all of these cows had started a new pregnancy. A friend having a kennel of Boxer dogs as a hobby complained that during the year that had just ended only one of the five female dogs had given birth to a litter of puppies. I suggested he add one tablespoonful of apple cider vinegar to the ration of each dog once a day. The following year all five female dogs gave birth to a litter of puppies. A doctor friend lamented the fact that after seven years of married life no children were born to them. I suggested he emphasize food rich in potassium in the daily food intake for him and his wife because potassium was so closely associated with orderly growth in the body. He did so and in due time I received an announcement of a son born to them.

2. Potassium increases the elasticity of body tissues enabling tissues to stretch easily. The effect of potassium is seen in the short labor of cows. Birth of a calf will take place within



a half hour after birth is started. With the mother cow receiving potassium a calf will be on its feet within five minutes after it is born and will be nursing at the mother cow's udder within one half hour after it is born. It will have strong rugged legs and a heavy coat of hair.

3. Outwardly a herd of dairy cows will show the benefit derived from the potassium in apple cider vinegar poured over the ration at each feeding. The coat of hair if rough will become smooth and shine. This is true of dogs and cats. Animals and human beings will not feel the cold weather temperature as much. If a dog has body odor this will disappear. The penetrating odor of a goat buck will disappear.

4. The influence of potassium on the digestive tract is readily demonstrated. The odor of ammonia and the odor of manure will disappear from a barn in about two months time when apple cider vinegar is poured over the ration. In human individuals there will usually be no odor to the bowel movements. When gas is passed by rectum no odor will be present.

5. In mink, potassium added to the ration in the form of apple cider vinegar which carries potassium over from the apple to the apple cider vinegar, produces an excellent fur. In chickens three fourths of a cup of apple cider vinegar added to a drinking water container holding 12 quarts made them feather out quicker. In hens and turkeys it stopped feather picking by other hens and turkeys called canibalism.

6. Chickens receiving apple cider vinegar added to their drinking water

immediately began laying medium and large sized eggs when they reached pullet size and started laying eggs. After the pullets had been laying one and a half weeks, out of 50 eggs gathered during the day, ten were pullet size eggs. After laying 20 days there were 4 pullet size eggs to each 100 eggs gathered. In dairy cows potassium in the apple cider vinegar poured over the ration at each feeding increased the butter fat content of the milk and the amount of milk. Of 162 farmers delivering milk to the creamery one lone farmer adding potassium in apple cider vinegar to the ration of each cow at each feeding had the highest butter fat content of the milk delivered. Another farmer pouring two ounces of apple cider vinegar over the ration of each of the 54 cows in his herd made more milk per cow than any one of the other 240 farmers delivering milk to the same creamery.

The owners of two herds of dairy

cows having apple cider vinegar poured over their ration received letters from their creamery to which the milk was delivered congratulating them on such an unusually low bacteria count of the milk. When the vinegar was stopped the bacteria count of the milk went up. When it was started again the bacterial count again went down. The employees of the creamery took home milk from these vinegar fed cows because it had a high butterfat, a low bacteria count and an excellent taste.

I decided to find out the attitude of crows and foxes toward the body of a dairy cow that had received potassium for two weeks before her death in an effort to combat a nutritional deficiency. This cow was hungry but could not assimilate her food. An autopsy failed to show cause of death. On February 11th the body of this cow was taken to a hill pasture where there were fox holes. Ordinarily crows gather around

to eat such a dead body but the crows would not eat this cow. The foxes would not eat her. This cow remained in full flesh from February 11th until June 4th when the maggots began to work and soon only the bones were left.

In view of what potassium does in the animal, fowl and human body may we not turn to the long range program of Vermont folk medicine which considers cancer to be a potassium deficient disease and each day at one or more meals add two teaspoonsfuls of honey and two teaspoonsfuls of apple cider vinegar to a glass of water as a source of potassium and take the contents of the glass during the meal. By doing so an individual will not only render body tissues unsuitable soil for the appearance of cancer but other diseases as well.

## Polish Beehives



Dr. H. Malcolm Fraser, Northwood, England, sent these two pictures of Polish hives that were in an exhibition of Polish Folk Art in London. The actual box or brood chamber fits between the shoulders at the back. The entrance is in front as can be seen. They are said to be 19th century work. The pictures were taken by Unity Studios of Wellington Place, St. Johns Wood, London. There are many odd hives devised to suit the fancy of their owners, just for novelty and interest, but these are among the most queer we have seen.



To control pests in timber areas, Professor Goesswald, of Wuerzburg University in Germany, breeds these red wood ants, making divisions and supplying queens much as we do with bees. Colonies distributed in the forests control a large number of timber pests. Beets spraying. — Hans Geng, Bavaria



**Edgar Tupper's Bear**

Dorine Tupper, Skowhegan, Maine, shows her husband and his bear. Bears are not common visitors to Maine bee yards but this one was likely on his way to the deep woods for his long winter's nap and he upset the Tppers' very best hives. Edgar had to wait until midnight to get a shot at bruin but he did and here hangs 234 pounds of honey thief.



# The Beginner and His Bees

## Good Combs

by W. W. Clarke, Jr.

However with foundation, they follow the start of the base and only if the comb is damaged will they build much drone comb. By the way, don't try to eliminate 100% of the drone comb; bees will always have a little around, nature requires the presence of a few, but not so many as some beekeepers have.

Besides good foundation, there are other conditions necessary for building good comb. There must be food present, since wax is manufactured from honey or sugar. A strong colony or swarm does the best job and warm weather seems to facilitate matters, so for the best combs place foundation in supers during a good honeyflow over a strong colony and chances are the combs will be almost perfect. Once they are filled with honey, they may be extracted and the combs used to replace poor combs in the brood nest. Combs drawn from foundation in the brood nest seldom extend to the bottom bar, and they almost always leave a hole at the front corner near the entrance.

It is a good idea to reinforce all foundation with wires. The wires should be embedded properly and the foundation fastened firmly at the top bar. When the foundation sags, two combs are usually ruined. Care must be taken when extracting new combs since they are easily broken. Either nine or ten frames of foundation may be placed in each super, but many beekeepers favor the nine-frame system, since the combs will

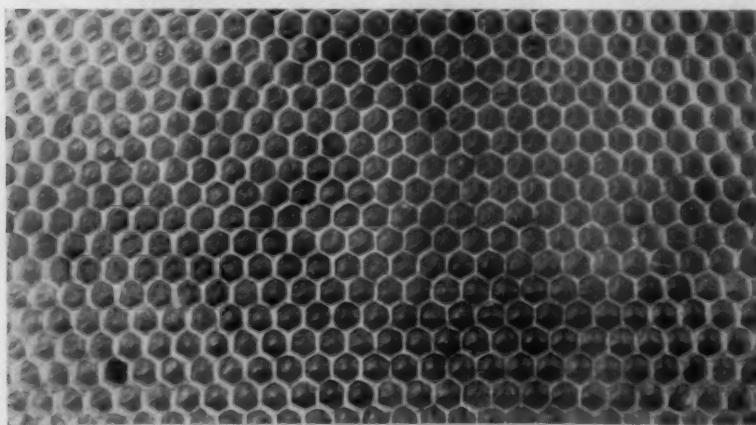
be made thicker and are more easily uncapped.

Spring is a wonderful time to replace any poor combs. If the bees are in a two-story colony, the bottom hive body can usually be removed and bad combs taken out, the rest cleaned up, and the hive body refilled with good combs and returned to the colony as the second story. This is the same as reversing hive bodies plus the fact that the conditions within the hive are improved. Even in a one-story colony, empty combs which are poor may be removed. Another opportunity to remove poor combs is at the extractor.

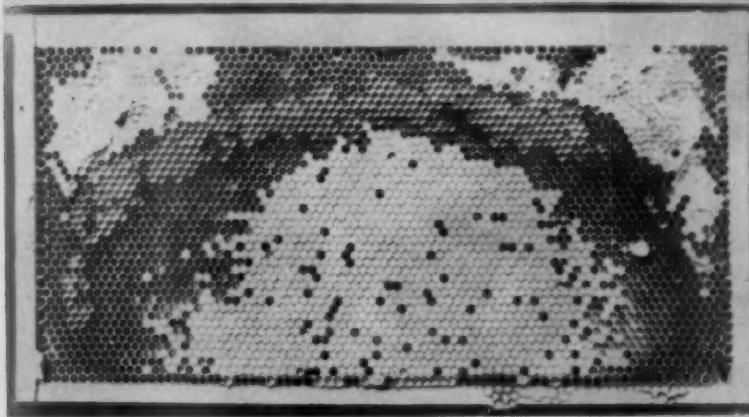
Since many beekeepers do not use two-story colonies or extract full depth comb as a general practice, another approach must be considered. In this case, one of the best ways to remove damage or poor comb, is to work them to the outside of the brood nest; once all of the brood has emerged and the combs filled with honey they may be removed. This comb should be replaced immediately, preferable with drawn comb. Place these combs near the edge of the brood nest rather than in the center which would divide the brood. Unless there is a good honeyflow when foundation is placed in the hive, the bees should be fed.

What should be done with the old comb? This is always a problem with the small beekeeper. If at all possible the wax should be saved. Put the comb in a burlap bag and then place the bag and its contents in a container of boiling water. The bag should be weighted and poked at intervals to help release the wax. After considerable boiling, allow the water to cool. The wax will be on the surface. A solar wax extractor is not too efficient with old combs. If there is a quantity of comb, the whole mess should be sent to a commercial wax rendering plant; with steam and a press, they will be able to recover considerably more wax. If the comb is stored, it should be protected against wax moth.

Two things are certain: There are too many poor combs in beehives today and too much beeswax is being wasted due to careless handling of comb and wax.



Straight rows of worker cells are sure to be used for egg laying and are a sign of a quality comb.



Here is a comb drawn to the bottom bar and into the corners. Also note how it has been used; for brood in lower center, a circle of pollen above that and at the top, especially in the corners, sealed honey.

Remember for good beekeeping, the maximum amount of worker brood comb will result in a better crop of honey, larger colonies of bees, and less swarming. To get good combs, use full sheets of good foundation which should be reinforced. It is best to produce the comb during a honey-

flow over a strong colony. If there is no honeyflow, the bees must be fed. Save all old combs for beeswax, render it carefully as it is ignited very easily. Commercial wax rendering outfits do a more efficient job, but it seldom pays to send less than 100 pounds to them at a time.

## EXTRACTED HONEY PRODUCTION FOR THE BEGINNER

by Julius Lysne

The beginner should start producing extracted honey as the production of comb honey is a job for the experienced beekeeper with top-notch skill. Even in the production of extracted honey, however, it is well to point out that success requires a good queen supported by a heavy force of bees, good combs, ample breeding and storage space, and an abundance of stores at all times.

We advise the beginner to start with five colonies the first year. This will return plenty of honey for home use and some to sell. A beeman without honey to sell does not create a good impression. The minimum equipment for five colonies should be 25 hive bodies with five covers and five bottoms. The metal covered top is the best in the long run. One hundred standard brood frames are needed for the brood nests. The supers should have nine frames to a body to make uncapping easier.

Order your package bees to arrive about fruit bloom when plenty of pollen is available. The first business of your bees is to build up into strong colonies, at the same time drawing out good combs. One good comb is certainly worth no less than one dollar so your bees can make



money from the very start. You must have well-made foundation for the frames. Best to use a reinforced foundation.

Feed the bees all the sugar syrup they will take until almost ten combs are drawn out. By then there should be enough of a honeyflow to enable the bees to build comb rapidly. Then add the second body with 10 frames of foundation.

Check each colony at least once a week to be sure progress is being made in comb building and that the queen remains equal to her job. There should be a large amount of brood

after about three weeks. A word about queens. We advise the controlled hybrids as they are more prolific. Your goal is a strong colony in about nine weeks and you need the most prolific queens you can get. A good queen is cheap at any price.

When the bees have drawn out most of the combs in the second body it is time to add a super. However, check each brood comb first to make sure it really is well drawn out. Do not guess about this point.

When adding the first super, place a queen excluder over the second brood body. Bait this first super with two combs of sealed brood from the brood nest. By now the main honeyflow should be well started and the bees should readily store honey in the super. Add more supers as needed during the flow. Since you have used queen excluders there should be no brood in the supers so there will be no trouble in removing bees from them at extracting time.

For extracting you need a honey tank, an extractor, and at least a wash tub for an uncapping can. We suggest a 75 gallon honey tank so you can handle your crop with the least amount of work. With this tank no straining of the honey is needed. Honey from the extractor and the cappings is emptied into the tank. The wax will rise to the top if the honey is allowed to remain in the tank three or four days. By then most of the honey may be drawn from the tank without getting wax in the containers. The rest of the contents of the tank will be mostly cappings, with some honey. Get out all the honey you can and put the cappings into sixty pound cans with the tops removed. Label it "Beeswax Refuse" and send it to some concern that will render the wax for you. They will pay you for both the wax and the remaining honey.

A word of caution about new combs. At first the extractor must be turned slowly or the combs may break. Extract some of the honey on one side and then turn the combs and extract the other side completely. Turn again and finish emptying the first side.

Put your honey into five pound glass jars. Do not heat it. But be sure you have all your extracting finished while the weather is warm and honey runs freely. If your honey granulates before it is all sold, it may be brought back to a liquid state by placing the jars in a bath of hot water up to the neck of the jars. Do not overheat or it will lose its natural goodness.



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Wholesale

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# -MEETINGS-



## Eastern Missouri and St. Clair County, Belleville, June 3

On Monday, June 3, at 7:30 P.M., the Eastern Missouri Beekeepers will meet with the St. Clair County Beekeepers on the ground floor of the State Highway Building which is just off the Square in Belleville, Illinois (30 minute drive). We hope all will be able to go. If you need transportation or if you will be able to provide transportation for someone, please call Ray Reinhold—TW 2-1014.

Let's have a good representation for this neighborly visit.

We are inviting the St. Clair County Beekeepers to meet with us in August. Please mark this date on your calendar as no further notice of this June meeting will be sent.

Louis Lueddecke  
Field Meet Committee

## Indiana Regional Meetings

Two meetings have already been held: At Washington on May 25th and at Plymouth on June 1. Two more in prospect:

### Northeast

Huntington on June 8th at Hiers Park in southeast part of city. Speakers: Alexander of Richmond, Dr. Harvey Lovell, Louisville, and Dr. B. Elwood Montgomery, Purdue. *Southeast*

Columbus, June 15th. Speakers: Jack Deyell (Editor of *Gleanings*), L. R. Stewart, Newport; Mr. Bishop of Louisville, and Dr. Montgomery.

## South Texas Bee School San Antonio, June 9th

All interested beekeepers are invited to attend the first free South Texas Beekeeping School to be held at 1:30 p.m., Sunday, June 9th on the grounds next to the A. I. Root Co. of Texas, 537 South Flores St., San Antonio. Here are some of the subjects to be covered during the afternoon:

Bee equipment and how to use it  
How to handle bees  
Installing a package of bees  
Local honey plants

## Catching swarms

Swarm control  
Harvesting the honey crop  
Spring, summer and fall management of the Texas apiary.

During the afternoon a package of Italian bees will be installed in a new hive. Later the bees and the hive will be given away as the grand prize.

Walter Barth

## Missouri Valley Association, Knob Noster State Park, June 9th

A picnic meeting of the Missouri Valley Association will be at Knob Noster State Park, on June 9th. The Park is 20 miles west of Sedalia on Highway 50. Meeting will start at 1 p.m. with a basket dinner. Then the guest speaker, G. H. Cale, Editor of the American Bee Journal, followed by games with prizes.

## Midwestern Association (Missouri), Lees Summit, June 9th

The Midwestern Association will meet at the apple house of Unity Farm a half mile east of Highway 50 and Coburn Road, Lees Summit, at 2:30 p.m., Sunday, June 9th. Clyde Corn, in charge of the orchards and the apiary at the farm will be the host and he will furnish a very interesting program. Refreshments will be served after the meeting. Everyone welcome.

J. F. Maher,  
Secretary

## Westchester County (New York), White Plains, June 16th

The Westchester County Association will hold its first outdoor meeting at the home of Mr. and Mrs. Eugene L. Morrison, 204 Woodhampton Drive, White Plains, N.Y., on Sunday, June 16th at 2:30 P.M.

At this meeting we will have inspection of hives and members will have an opportunity to see how the "Bees" are working.

Please make an effort to attend. Visitors are welcomed. Refreshments will be served.

Mrs. Alfred Roth, Pub.

## Berks, Dauphin and Lebanon County Associations (Penn.) Bethel, June 10th

The associations of Berks, Dauphin and Lebanon Counties, Pennsylvania, will meet at the apiary of Paul S. Ziegler, a half mile east of Bethel, Berks County, on old Route 22, Monday, June 10th at 6 p.m. Mr. Ziegler will demonstrate the raising of queens. Refreshments will be served.

Darlene Becker  
Secretary

## Worcester County (Mass.) Shrewsbury, June 15th

The Worcester County Association will hold a meeting on Saturday, June 15th, at the apiary of Warren Newton, 66 Gold Street, Shrewsbury, Mass. A business meeting at 2:00 P.M. will be followed by a basket lunch. The club hive will be on display. Philip Pike, president will preside.

Peter S. Stapor  
Publicity

## Connecticut Association, Stamford, June 22

The Connecticut Association, Inc. will hold its summer meeting June 22, beginning at 10 A.M. at the Stamford Museum and Nature Center, High Ridge Road, Stamford, Conn. Those coming to the meeting via the Merritt Parkway, turn off at the High Ridge Road entrance.

The program of the day is under the chairmanship of Mr. Roy Stadel. Mr. Stadel is planning a bee school with the help of other Connecticut beekeepers as instructors.

The program will include material suitable to the beginning beekeepers and those who have kept bees for sometime.

Lunch will be picnic style, each person to bring their own plate, etc., coffee will be furnished by the Ass'n.

An invitation is extended to any out of state visitors to attend this meeting. All who attend will be welcome.

P. J. Hewett, Jr.  
Publicity

Middlesex County (Mass.),

Wellesley, June 29th

Middlesex County Assn. (Mass) will hold their June meeting June 29th at the home and apiaries of one of their newer members Dorothea Morgan of Wellesley, Mass. The "Club" hive was installed at the April meeting by President Neander before the members present in the hall of the Mass. State Agricultural Experimental Station.

The hive, which showed good progress at the May meeting at member Sam Dixon's place, will be inspected along with other hives belonging to the "Host" member. The bees in this location this year had a real early start due to the early season as the apple blossoms were in bloom and the bees had fine weather to work them.

This "Club" hive, as in other years, will be given to one of the lucky members of the association at the final outdoor meeting in September.

Ohio Summer Meeting, Columbus,  
July 27-28

In New Youth Bld. on 17th St., between 4th Ave. and Cleveland, across from Ohio State Fairgrounds. Begins at 10 a.m. Sat., the 27th. Banquet at 6:30 p.m., Saturday evening.

Beekeeping Short Course  
Pennsylvania State University  
August 12-16, 1957

Monday A.M.

10 to 12 Registration

Monday P.M.

1:30 A word of welcome—Dr. Bertil G. Anderson  
1:40 Announcements—Dr. F. C. Snyder  
1:50 Introductions  
2:00 Introduction to beekeeping terms—W. W. Clarke  
2:30 Secrets of the Hive—Edwin J. Anderson  
3:15 Making a Start in Beekeeping—W. W. Clarke  
4:00 Inspection of the laboratory and its equipment

Tuesday A.M.

8:30 Colony Activities and Characteristics—Edwin J. Anderson  
9:00 Care and Introduction of Package Bee—W. W. Clarke  
9:45 Spring Management—Edwin J. Anderson  
10:30 Races of Bees — W. W. Clarke  
11:15 Cut Comb Honey Production —John M. Amos

Tuesday P.M.

1:30 Work in the Apiaries to Observe  
a. general management practices  
b. honey production  
c. swarm control practices  
d. to remove honey from colonies, with bee escapes, carbolic acid cloths, and shaking

Tuesday Evening

7:30 Honey Producing Areas  
Honey Plants (slides)  
Movies

Wednesday A.M.

8:30 The Story of Beeswax—W. W. Clarke  
9:15 Comb Honey Production—Edwin J. Anderson  
9:45 Pollination—W. W. Clarke  
10:30 Extracted Honey Production —Edwin J. Anderson  
11:15 Swarm Control—John M. Amos

Wednesday P.M.

1:30 Demonstrations  
1. Shaking package bees  
2. Introducing package bees  
3. Transferring bees from a box to a modern hive

Wednesday Evening

7:30 Composition and Properties of Honey—Edwin J. Anderson  
Sampling Kinds of Honey—W. W. Clarke  
Movies

Thursday A.M.

8:30 Extracted Honey and Its Care—Edwin J. Anderson  
9:15 Requeening—George Rea  
10:00 Fall and Winter Management—W. W. Clarke  
10:45 Queen Rearing—Edwin J. Anderson  
11:30 Question Period

Thursday P.M.

1:30 Examining colonies in the apiary used for queen rearing and mating queens  
Grafting in the apiary  
Clipping queens and painting them with a colored lacquer  
Removing honey  
Making queen rearing equipment

Thursday Evening

6:30 Banquet at the Autoport

Friday A.M.

8:30 Factors Affecting Resistance of Honey Bees to A.F.B.—John M. Amos  
9:00 History of Beekeeping — George Rea  
10:00 Marketing Honey — Edwin J. Anderson

11:00 Diseases of the Honeybee—  
W. W. Clarke

Friday P.M.

1:30 Extracting and bottling honey in the honey house.  
Grading comb honey  
Wrapping comb honey  
Bottling chunk honey  
Working beeswax  
Making creamed honey

The registration fee is \$5.00 for Pennsylvania beekeepers and \$7.50 for those from other states. To register write to A. C. Snyder, director of Agriculture Short Courses, Penn State University, College Park, Pennsylvania.

Iowa Beekeepers Summer Meeting

Henry Hansen, Dakota City, Host  
July 13, 1957

9:30 A.M.—Registration  
10:00 A.M.—Games  
11:00 A.M.—Demonstrations—Three races of bees  
12:00 Noon—Pot luck if desired or plenty of restaurants in town  
Coffee and Ice Cream furnished free  
Exhibit of new honey handling equipment  
1:00 P.M.—Walter Johnson — "Honey Handling Equipment"  
Bud Cale—"Hybrid Bees"  
C. D. Floyd—"Honey Promotion"

South-East Minnesota Beekeepers Picnic  
Red Wing, July 20th

The S. E. Minnesota Beekeepers Association will hold their summer picnic at Colville Park, Red Wing, Minnesota on July 20 (Saturday). Pot luck dinner will be served at the pavilion and all beekeepers and their families are cordially invited. Pack a hot dish or lunch of some sort and meet with a swell bunch of fellow beekeepers.

F. Q. (Quint) Bunch  
Secretary.  
Welch, Minn.

Norfolk County (Mass.) Walpole,  
June 2nd

The Norfolk County Beekeepers' Association will hold its next meeting in the Orchard at the Norfolk County Agricultural School, Walpole, Mass., on Sunday, June 2, at 2 P.M. This will be the first Outdoor meeting of the season. The inspection of the Club Hive will be the main attraction.

Edith L. Colpitts, Cor. Sec.

## Switching Bees Quickly To New Crops

In the Irish Beekeeper, August, 1956 quotation is given from the Bee World of May, 1956 about two Russian teams of researchers and their work.

To make bees switch quickly from one crop whose flowering period is ending to another which is beginning to flower it is recommended that colonies should first be fed with a 50 per cent solution of calcium chloride in which the flowers of the first crop are steeped and then with a "tea" of the new flowers in a 50 per cent sugar syrup.

The calcium chloride (a repellent) destroys the bees' association with the nectar flow of the former crop and the second trains them to the new crop.

The bees were made to switch from black locust to sainfoin. Thirty colonies were divided into three groups, one fed on the repellent in which the flowers of black locust were steeped and then 50 per cent sugar syrup containing sainfoin flowers. The second group was trained on sainfoin without the repellent against black locust. The third group left unfed. The bees from the first group worked sainfoin quickly in larger numbers, began earlier, finished later, gave a better honey crop than either the second or third group.

### J. J. Davis Featured

A recent number of the "Pest Control" magazine featured Prof. J. J. Davis, head of entomology at Purdue University in Indiana, until he retired in June of 1956.

Mr. Davis was always a champion of the honeybee and his efforts were always towards protecting the honeybee while at the same time collaborating with pest control measures.

Graduating from University of Illinois in 1907, Davis has had a full life of "bug work" and no doubt will continue to be useful in his retirement.

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Italian and Pure Italian Hybrid  
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3 Pound Packages Bees with a Queen  
Each \$4.00  
Young Laying Queens Each 75c  
Jackson Apiaries, Funston, Ga.

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"Originators of Frame-Grips"  
Send now to McCORD MFG. CO.  
Rt. 2, Box 866, San Jose, Calif.

Positive Grip Through Deluxe . . . 2.75  
the Leverage Action of Utility . . . 2.45  
This Strong Aluminum Plus 32c postage  
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3 lb. with queen \$4.00; 4 lb. with queen \$4.90; 5 lb. with queen \$5.80. Extra queens 85c each. Queenless package deduct price of queen.

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50 and over, \$1.10

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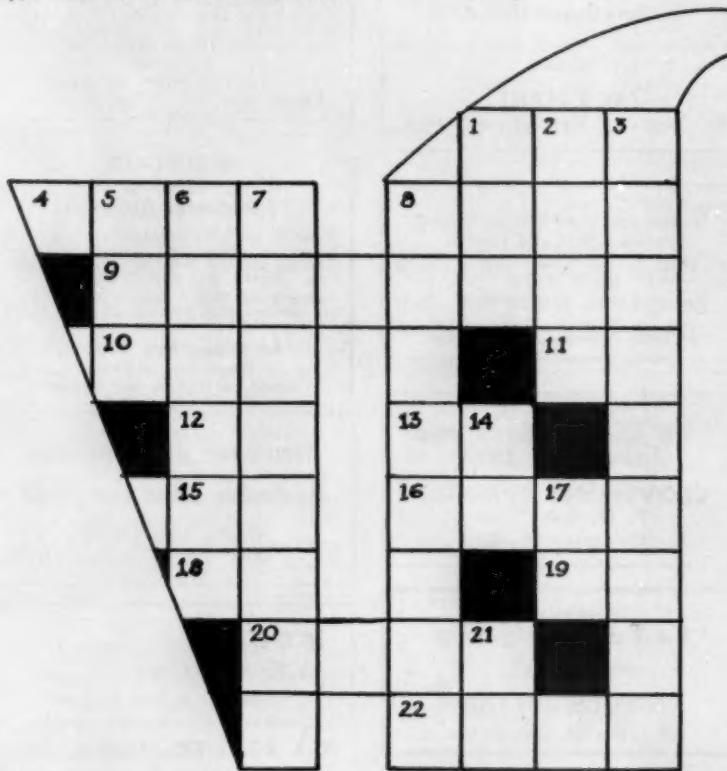
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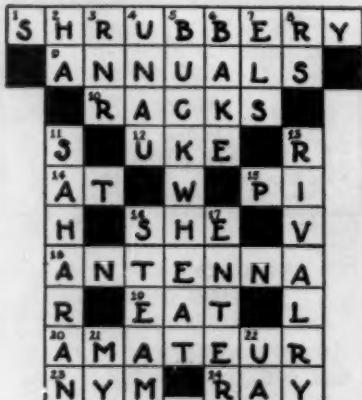
## PAT'S PUZZLER — The Smoker

Away we go, down to the bottom. Only thirty-five answers for May. They came from twenty-two states, so the majority came from only one reader per state. And even with that distribution there are only five winners. Pat raised the ante on us for sure. She made it tough. At home we worked on her meanings for three days before finally tumbling to the right word. Some just worked themselves out. Now, let's see what we can do this time with the Smoker. As most contestants say, it's fun however it works out.



### DOWN

1. \_\_\_\_\_ Baba and the 40 Thieves
2. Familiar friends
3. Planted areas of grass
5. The atmosphere
6. This puzzle is the shape of a \_\_\_\_\_
7. Encourage
8. You'll blow smoke at this part of the hive
14. Ordered back (Abbr.)
17. Sound of sheep
21. Sound of laughter



### ACROSS

1. Spirit of man
4. Container for flowers
8. Pseudonym of Charles Lamb
9. State of resisting the swelling from bee stings
10. Steal
11. High frequency (Abbr.)
12. Knock out (Abbr.)
13. Receiving office (Abbr.)
15. Elias (Abbr.)
16. Name of refractometer used in sugar analysis
18. Radium (Chem.)
19. Aluminum (Chem.)
20. Every
22. Destroys

### May Results

What can be said? Pat worked in "3.14" again (15 across). Pi is 3.1416, generally allowed as 3.14. Pi times the square of the radius of a circle, in plane geometry, gives the area of the circle. Her Saharan bee had most puzzlers tripped. It is the gentlest bee we know. Then that "Rogue in the Merry Wives of Windsor," NYM, was another fooler as

most answers gave the pronoun (21 down) as "me" instead of the possessive "my." So that rogue got to be "Nem" instead of "Nym." The merry wives wouldn't like that. So, beset with all that rough going, most contestants just went off the beam. There were only the following five winners:

Colorado—Mrs. Ben M. Knutson, Alamosa

Massachusetts—Aylmer J. Jones, Malden

Minnesota—C. Vernon Smith, Le Sueur

Washington—R. N. Woolford, Kalama

West Virginia—James E. Smith, Beckley

### Legume Seed Production

"Acreage, Production, and Value of Seed Crops in 1956" is the title of a recent publication of the Agricultural Marketing Service of U. S. D. A. A part of this 24-page publication is of interest to beekeepers.

**Alfalfa Seed:** The 1956 crop of alfalfa seed was 23 per cent smaller than the record crop of 1955 and was harvested from the smallest acreage planted since 1948. The yield per acre was 182 pounds and is the highest yield ever obtained. It compares with the previous record yield of 156 pounds in 1954. The high average yield to the acre for states were: Washington, 500 pounds; California, 420 pounds; Oregon, 370 pounds; and New Mexico, 365 pounds.

**Red Clover Seed:** The red clover seed crop for 1956 was 11 per cent smaller than the 1955 production and acres harvested were a fourth less. The average yield per acre of 75 pounds was 14 pounds larger than the 1955 yield. Idaho, Montana, Washington and Oregon were the leading states in average yield, that of Idaho amounting to 325 pounds of seed to the acre.

**Alsike Clover Seed:** Production was the smallest crop on record, 8 per cent smaller than last year, and the average harvested was 22 per cent smaller. The yield of 216 pounds of clean seed per acre is the largest of record, and compares with the 1955 yield of 184 pounds. California, Oregon and Idaho lead in average yield, that of California amounting to 450 pounds to the acre.

The yield of seed and the acres harvested for sweet clover and lespeze both showed reductions as compared with 1955. Average seed yields were about average.

Nothing is said about the part honey bees played in pollination of these seed crops, but we know they had a major role.

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LITTLE'S  
ITALIAN QUEENS—  
ROYAL JELLY

1 to 24 ..... \$1.40  
25 to 99 ..... 1.30  
99 and up ..... 1.20

LITTLE'S APIARIES

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### American Rabbit Journal

Shows the Way to Success

The leading Rabbit Farming Magazine. Explains the growing meat rabbit industry. Non-fancy. Est. 1931. 8 years \$2.00; 1 year \$1.00; Sample dime.

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Our queens are all young and large. Packages also available through June.

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FRAMEWORK ITALIAN  
QUEENS 65c ea. any number  
Good Queens, Good Price,  
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Made in two styles for round or sunburst jars.  
Cuts are actual size of labels.

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# —Editorial—

## Proportion and Perspective

In the April issue of The American Bee Journal, appeared an editorial entitled, "The Check-Off Plan Deserves Your Support." In this editorial we earnestly stated—*more lasting good can come to the industry through research than by any other means.* With respect to promotion of honey, we said—we cannot afford not to increase our promotional programs.

In the May issue our editorial was entitled, "Additional Research—Our Future Hope." We strongly asserted—the promotion up to now and the research to date has helped but it has not been sufficient to keep our industry apace with other industries.

From the response received from our readers, which was none at all regardless of whether our reader was a hobby beekeeper, a commercial producer, a honey packer, a researcher or what, we might as well have written that the moon is made of green cheese, or that Mickey Mouse was coming to town.

Your editors, needless to say, are discouraged as are many other leaders. *This complete apathy toward the Check-Off plan and the need for increased promotion and effective research can be ruinous to our future.*

The February-March issue of Chemurgic Digest, the official magazine of the Council for Agriculture and Chemurgic Research, carried the following information in a cover-page editorial, entitled, "Proportion and Perspective."

"The current figure for the NET income of American agriculture is \$11.8 billions.

"The appropriations administered by the Department of Agriculture stand at \$5.3 billions.

"An ill-founded assumption that the U.S.D.A. spends its funds only to benefit farmers could make too much of the fact that the appropriations equal nearly half of the income from farming.

"However, \$1.9 billions of these

funds go for the price support programs; and \$1.3 billions are for the Soil Bank. Together these add up to \$3.2 (of the \$5.3) billions devoted to purposes which provide little enduring advancement for farmers.

"In contrast to these billions, consider the amounts provided for research, the most productive activity, the one with permanent value, of all those which government assumes in the field of agriculture.

"For all the purposes characterized as 'research,' which includes substantial sums for routine inspection and related services, the Congress has provided slightly more than \$100 millions. The total of state and federal appropriations for research is estimated at \$190 millions.

"Despite the fact that agriculture's output exceeds the effective market demand, the overwhelming proportion of federal research money is devoted to improving production. Virtually all research funds provided by the state legislatures go for production. Most of the research in agriculture by industry looks to enlarging the sales of materials which aid production. The private industry total is estimated at \$185 millions. This brings the total, public and private, for all agricultural research, to about \$375 millions.

"The current federal appropriation for utilization research, including forestry and \$400,000 for new crops is \$16,145,000.

"Total U.S.D.A. appropriations: \$5.3 billions, or 330 times the provisions for utilization."

There is real food for thought in these presented facts. With the limited amount of information available to us, we have attempted to use a little "proportion and perspective" as it applies to the bee and honey industry.

Starting with \$1.9 billions for price support and the \$1.3 billions for the Soil Bank—a total of \$3.2 billions in

direct aid to farmers, the beekeeping industry can be thankful that only an infinitesimal portion of such a vast amount has gone to support the price of honey. The honey support program has been a fine stabilizing thing for our honey market; it is regarded in Washington as an ideal price support program. So, we certainly haven't shared in this immense cash outlay.

The GROSS income for beekeepers, according to the U.S.D.A. annual crop summary for 1956, amounted to almost \$43 millions for both honey and beeswax. What was the NET income? We estimate it in the vicinity of \$20 millions. We have been informed reliably, but not officially, that over \$400,000 is appropriated for federal research on bee and honey projects. Our comparison, based on these figures, then shows that while all of agriculture received but 1 per cent for research, the beekeeping industry received about twice that percentage.

Our need for MORE research then, must closely parallel what is contended by the editorial "Proportion and Perspective." We do not know what is being appropriated for honey utilization research in hard dollars, but we can clearly state that a large proportion of the total appropriated for beekeeping research, as with agriculture in general, is for research other than that for utilization.

Is this an answer? Do we need more private research aimed at honey utilization? We think there are answers here—answers of promising great value to the beekeeping industry.

This editorial is so fundamentally basic that it may be disputed or agreed with or it may be considered too partial a survey. Whatever your thought about it, we invite you to tell us what you think about the figures and suggestions. It should be thought provoking.

# —The Market Place—

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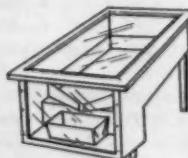
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# -Crop and Market-

by M. G. Dadant

*Condition of Bees*—Pretty generally throughout the country bees are in quite satisfactory condition having come through winter without too heavy losses and building up fairly well in spite of rather cool weather.

With the weather, however, in the last two weeks of May being very rainy and cold, if bees were not carefully watched there is quite a probability that many colonies will have run short of stores and as a consequence cut down on brood rearing or even starve. Evident also was a shortage of pollen on account of the inclement weather which added to the difficulties.

In the Canadian provinces bees seem to have come along quite gradually for the spring season and seem to be in average condition on May 20 when this report was written. On a whole we would assume that bees were at least, on this date, in average condition with considerable necessity of feeding and perhaps in some sections particularly the Northeast above normal.

*Honey Plants*—A remarkable change has come in the condition of honey plants and honey prospects owing to the reversal of the extremely dry conditions in many sections by perhaps over generous rains. This applies to the entire Southwest, Texas now getting more rain than would be desirable and in many cases floods.

At last reports, only a very few sections were complaining of dry weather. This represented the northern areas including the Dakotas, Wisconsin, and perhaps northern Minnesota. Evidently much of the drought earlier reported in the New England states has been alleviated by the recent rains. On the whole, such honey plants as are available are therefore in quite excellent condition. It is true in many parts of the Central West that honey plants suffered greatly during the dry fall and winter and perhaps in the case of Dutch white clover and even sweet clover there may not be the amounts available to assure a large crop. Northern sections of Iowa and into southern Minnesota also were complaining earlier of drought, which has been partly relieved by the later rains. It is, however, in the plains sections that the change over from

dry to wet has been especially noticeable and, of course, in the irrigated sections prospects are brightened by the fact that there seems to be ample water available for later irrigation in this mountain section. On the whole we believe that conditions of bees and the moisture conditions as well as the conditions of honey plants are somewhat above normal. Especially favored sections, if the cool wet weather does not continue into the honey crop, are the Central South including Arkansas, Tennessee, Kentucky and into the Eastern Seaboard.

*Crop*—Of course in the northern sections it is too early to discuss crops except the early contributing factors of dandelions, fruit bloom, and locust. In most cases these plants have been quite readily available but the weather conditions have been such that bees have not been able to make full use of these pollen and nectar sources. In Florida the orange crop probably will not be over 40% to 50% of normal owing to weather conditions. However, in most of the balance of the South the contributory flows have been fairly satisfactory and of course more moist conditions would indicate a big chance of a good flow later on. In fact the whole Southeast is optimistic over the possibilities.

One report we have from Texas, that is from Southeast Texas, in the neighborhood of Corpus Christi, is that an excellent flow was on, on May 15 with possibilities of more flows to come. However, the vetch flow in Texas has been greatly handicapped by too much cool wet weather and as a consequence it is doubtful whether there will be more than a 20 to 30 pound surplus from this source. The rains, of course, have made for greater possibilities in the clover and the cotton flows to come.

In California the weather has been satisfactory but the orange flow has concluded and in many cases has not proved up to peak largely because bees were not in condition and one of the factors of this was the loss of bees through spraying.

Drought has hindered the growth of plants in the unirrigated sections.

Otherwise conditions seem to be about normal. In the extreme Northwest conditions are quite satisfactory and same seems to rule for the entire Dominion of Canada.

*Honey Left*—Practically without exception in all sections of the country except Arizona and California reports are that honey is well cleaned up. In California and Arizona there has been a slight weakening in the market for old honey probably owing to the influence of a weakening in the European market there and a flowing into these markets of a considerable Central American supply.

On the whole, however, except for what excess amount of honey may be held in the hands of packers and cooperatives the cleanup is pretty general throughout the country.

Not to our knowledge has any of the new honey been disposed of but we do know of some old honey still in the hands of beekeepers maintaining their desire for the top peak price which may not develop depending upon the outcome of the present season.

*Summary*—All in all bees are in good condition if they have been taken care of with pollen supplements and sugar during the cold wet weather of late May. The plants while not as numerous in some sections have had the advantage of all the moisture they could use and now whether or not a crop develops remains entirely in the "lap of the gods."

A few times in the writer's recollection have conditions been more favorable and more dependent upon the other developments from here on out.

While there may be a temporary weakening of the honey market through the influence of lack of foreign demand and the "dumping" of some Central American honey we do not think that this means any great difficulty with prices.

On the whole such prices eventually will be determined on how anxious and how active beekeepers and beekeepers' organizations are in publicizing honey. We saw during the season just passed much less activity in this way than in the previous season. We hope the season of 1955-56 will be repeated in this respect.

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**FLOWERS BEE COMPANY, Jesup, Georgia, U.S.A.**

Phone Juno 4-2830 or Juno 4-2837

# QUEENS

When You Want  
QUALITY at LOW COST  
Look For This Sign



Trade Mk. Reg.  
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KELLEY—"The Bee Man"

**KELLEY'S ISLAND** stock queens grown on our own bee farm and rushed out daily from Clarkson by air mail.

1 - 24 Prepaid air mail	\$ .85 each
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100 and up Prepaid air mail	.70 each

**WALTER T. KELLEY CO.**

CLARKSON, KENTUCKY

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## 7 LAKES RANCH

This Summer or Fall

FOR That Vacation you have planned so long  
The Rest you have earned so well.

For Particulars write

John & Alice Holzberlein — Meeker, Colo.



### Dadant's Plain Foundation

Over 75 years of "know-how" go into the manufacture of Dadant's plain Foundation. If you prefer to set up your own by hand, buy the best. Buy Dadant. Every sheet is equal to the best ever made. Every sheet inspected, hand sorted, and tissue packed in tight cartons.

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### Where to from here?

With reduced rail schedules, limited connections and the threatened limitations on Mail service, we have to plan all shipments to make best connections for prompt delivery. This is only part of our service to you.

Other problems are always presenting themselves. We always keep you and your orders in mind and do the best possible to serve you.

May 20th prices as follows:—

	2 lb. Reg. queen	3 lb. Reg. q.
1-24	\$4.00 each	5.10 each
25-99	3.75 each	4.85 each
100 up	3.50 each	4.60 each
	Reg. Queens	Island Hybrid q.
1-24	\$1.15 each	1.50 each
25-99	1.05 each	1.40 each
100 up	.95 each	1.30 each

## ROSSMAN APIARIES

P.O. Box 133

Moultrie, Ga.

## Root's 3-Ply Foundation

Resists SAG — STRETCH — MELT DOWN — BREAKAGE

## Guarantee

WE GUARANTEE our 3-ply Foundation to be entirely satisfactory, both in material and workmanship. If, after examination, you believe our Foundation is not as represented, return the goods at once at our expense. We will refund your money with all transportation charges you have paid. Guarantee applies to Root Quality goods shipped from the factory or authorized distributors.

*Alon I. Root*  
General Manager, A. I. Root Company

- AS MANY WORKER CELLS in two 3-ply combs as in three ordinary combs.
- THE ADDED STRENGTH of 3-ply means longer life, less labor, and lower costs since three-ply combs will last for years.

IT takes plenty of good combs to harvest a maximum crop. We guarantee you good combs from 3-ply Foundation if it is given to your bees during a good honey flow. Once drawn, the finished combs will resist stretch, melt down and breakage.

The inner layer of Root's 3-ply pure beeswax foundation is toughened with a minor portion of high quality hydrogenated vegetable wax. This toughening insures good combs free of costly distortion and also increases resistance to breakage in the extractor.

Don't wait until your combs break before replacing with 3-ply. Order a supply today from your nearby Root dealer or directly from any of our three conveniently located manufacturing plants. Don't be without the good combs that secure the maximum crop. Combs that will also resist sag, stretch, melt down, and breakage. 3-ply will do that for you. We guarantee it or your money back.

**Available either Wired or Unwired**

**ORDER A SUPPLY OF 3-PLY NOW!**

**The A. I. Root Company**

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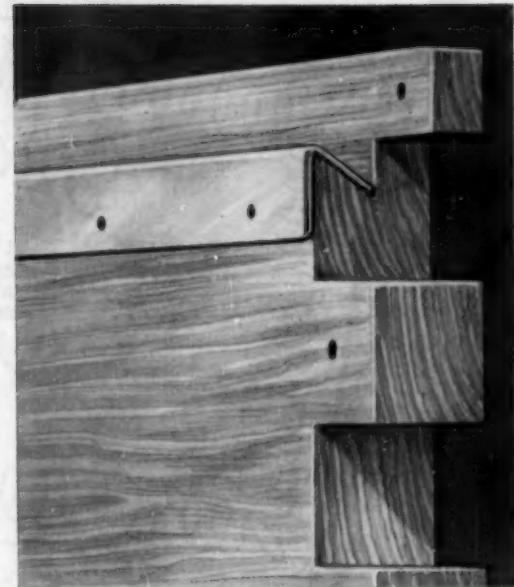
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**That Something  
EXTRA  
You Get with  
Dadant's Lewis-Beeware**

## V Shaped Frame Rests

Ever set the end of the comb and frame on a flat rabbet and crush a bee? Ever stick the end of the hive tool behind the frame end to pry it loose? Then break the end (or at least part of it)? Well - don't say "no." We all have until we see the big difference when the hive rabbets are v-shaped -- so few bees are killed — so we can lift out the frames more easily — so we can forget to cuss.

Also, the v-shape is fitted with a metal rabbet. That reduces propolis. Scrape your knife along the slope and out comes



the propolis because it's not packed hard like window glass.

When you push the combs over from the sides they slide over easily. When you twist combs apart for space you don't have to force them with the tool from down at the sides.

The v-shaped frame rest with metal rabbet makes your beekeeping much more pleasant and much more efficient. It's part of "that something extra you get in Dadant's Lewis-Beeware."

# Dadant & Sons, Inc.

HAMILTON, ILLINOIS

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